

# Service Manual

## COLOR TELEVISION

### CHASSIS : CM-908S

Model : DTR-14D9/20D9/21D9 ME/MP/MT/MZ

DTR-14D2/21D2 ME/MP/MT/MZ

DTR-1420/2120 ME/MP/MT/MZ

DTR-2131/2132 ME/MP/MT/MZ

#### MODEL OPTION LIST

MODEL	TEXT	PIP
ME	O	O
MP	X	O
MT	O	X
MZ	X	X

#### Caution

: In this Manual, some parts can be changed for improving. their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List)in Service Information Center(<http://svc.dwe.co.kr>)

DAEWOO ELECTRONICS Corp.

<http://svc.dwe.co.kr>

Jan. 2004

DAEWOO

## TABLE OF CONTENTS

1. SPECIFICATIONS .....	2
2. SAFETY INSTRUCTION .....	3
3. ALIGNMENT INSTRUCTIONS .....	5
4. ELECTRICAL PARTS LIST (Different Parts) .....	13
5. DIFFERENT PARTS	
5-1. CRT INCH DIFFERENT PARTS OF CM-908S .....	18
5-2. FUNCTION DIFFERENT PARTS OF CM-908S .....	20
6. SCHEMATIC DIAGRAM .....	21
7. PRINTED CIRCUIT BOARD .....	22
8. MECHANICAL EXPLODED VIEW AND PARTS LIST .....	23

## APPENDIX (“Appendix is provided only by internet [<http://svc.dwe.co.kr>]”)

9. IC DESCRIPTION .....	26
10. TROUBLE SHOOTING CHARTS .....	55

## 1. SPECIFICATIONS

Items	Model	DTR-14D9/20D9/21D9 ME/MP/MT/MZ DTR-14D2/21D2 ME/MP/MT/MZ DTR-1420/2120 ME/MP/MT/MZ DTR-2131/2132 ME/MP/MT/MZ	
TV Standard	Color system	PAL/SECAM, NTSC-4.43(AV)	
	Sound system	B/G, D/K, I	
Rated Voltage		AC 110~250V, 50/60Hz	
Power consumption		14"=57W, 20"=69W, 21"=72W, 21"(Flat)=74W	
Sound Output Power		5W+5W(14",20"), 7W+7W(21",21"flat)	
Channel Coverage		VHF-L : IC1-S6CH (43.25MHz~140.25MHz) VHF-H : IC1-S36CH (147.25MHz~423.25MHz) UHF : S37-C57CH(431.25MHz~863.25MHz)	
Tuning System		FS Tuning System	
Program No. Indication		ON-Screen Display	
Program Selection		100 Programs	
Aux. Terminal		AV input	AV1(Rear) : RCA or Euro-Scart AV2(Front) : RCA DVD(Rear) : RCA -> Y, Cr, Cb, or CVBS input
		AV output	Monitor Out : Rear RCA TV out : Rear Scart (Optional)
Remote Control Unit		R44C07	
Screen size		14" : 37Cm (Diagonal) 20" : 48Cm (Diagonal) 21", 21"flat : 51Cm (Diagonal)	

## 2. SAFETY INSTRUCTION

### NOTE

**BEFORE SERVICING THIS CHASSIS READ THE “X-RAY RADIATION PRECAUTIONS”, “SAFETY PRECAUTIONS” AND “PRODUCT SAFETY NOTICE” BELOW.**

### X-RAY RADIATION PRECAUTIONS

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 25kV(21”) at max beam current. The high voltage must not, under any circumstances, exceed 27kV(21”). Each time a receiver requires servicing, the high voltage should be checked. It is recommended the reading of the high voltage recorded as a part of the service recorded as a part of the service records. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continuous RADIATION protection, the replacement tube must be exactly the same type tube as specified in the “PART LIST”.

### SAFETY PRECAUTIONS

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back cover removed involves a shock hazard from the receiver.
  - 1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
  - 2) Always discharge the picture tube to avoid the shock hazard before removing the anode cap.
  - 3) Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any FUSE in this TV receiver is blown, replace it with the FUSE specified in the “PART LIST”.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10mm away from circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver must operate between AC 100-240 volts, 50/60Hz. NEVER connect to DC supply or any other power or frequency.

### PRODUCT SAFETY

Many electrical and mechanical parts in this chassis have special safety-related characteristics.

These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual and its supple-

ments, electrical components having such features are identified by designated symbol  $\triangle$  on the “PART LIST”.

Before replacing any of these components, read the “PARTLIST” in this manual carefully.

The use of substitute replacement part which do not have the same safety characteristics as specified in the “PART LIST” may create X-RAY RADIATION.

## 4. ALIGNMENT INSTRUCTIONS

SVC KEY	ITEM	BARE DATA	14 inch	20 inch	21 inch	21" (FLAT)	REMARK
			(CPT/1489DY)	(OHPT/2050DY)	(CPT)	(LGPD/OEC)	
S1	Heat-Run	-	-	-	-	-	
S2	SCREEN	-	-	-	-	-	Screen Adjust
S3	SOUND TEST	-	-	-	-	-	
S4	PICTURE TEST	-	-	-	-	-	
S5	BCL THR	+00080	+00080	+00125	+00125	+00115	FIXED, Maximum Beam Current Limit
	BCL GAIN	+00015	+00015	+00015	+00015	+00015	FIXED, Average Beam Current
	WHITE PEAK	ON	ON	ON	ON	ON	FIXED
S6	H-CENTER	+00098	+00098	+00094	+00070	+00074	Adjust for Geometry
	V-CENTER	+03940	+03940	+03920	+03920	+03900	
	V-SIZE	+00088	+00088	+00097	+00115	+00148	
	H-SIZE	+01520	+01520	+01520	+01520	+01520	
	PARABOLA	-00122	Don't Care				Don't Care (For Large CRT)
	V-LINEARITY	+00016	+00000	+00000	+00000	+00000	FIXED
	S-CORRECT	+00011	-00006	-00018	-00028	-00029	
	CORNER	+00120	Don't Care				Don't Care (For Large CRT)
	H-BOW	-00517	Don't Care				
	H-PARALL	+00020	Don't Care				
	EW-PRAPEZ	+00121	Don't Care				
S7	P H POS	+00046	+00046	+00046	+00041	+00041	
	P V POS	+00028	+00028	+00028	+00028	+00028	FIXED
	P R PEAK	+00130	+00130				
	P G PEAK	+00130	+00130				
	P B PEAK	+00130	+00130				
	P-CONTRAST	+00003	+00003				
	P-BRIGHT	+00003	+00003				
S8	R-Drive	+00170	+00160	+00160	+00180	+00180	
	G-Drive	+00170	+00160	+00160	+00180	+00180	
	B-Drive	+00170	+00160	+00160	+00180	+00180	
	R-Bias	+00120	+00130	+00130	+00130	+00130	
	G-Bias	+00120	+00130	+00130	+00130	+00130	
	B-Bias	+00120	+00130	+00130	+00130	+00130	
S9	BRM	+00120	+00130	+00130	+00130	+00130	For Sub-Brightness
S10	NOR BRIGHT	+00032	+00032			+00032	
	NOR CONTRAST	+00060	+00060			+00060	
	NOR COLOR	+00032	+00032			+00032	
	NOR SHARPNESS	+00048	+00048			+00048	
	CORING	+00008	+00008			+00008	
S11	PIP ON	ON	ON				
	DIGI EYE	ON	ON				
	TEXT SEL	OFF	OFF				
	TELETEXT	ON	ON				
	LARGE	OFF	OFF				
	VID FRAME	ON	ON				
	HOTEL VOL	+00020	+00020				
	HOTEL MODE	OFF	OFF				
SVC MENU	CONTRAST	32	32				don't care
	SCREEN IBRM	400	420	420	420	430	For Screen adjusting
Main B +			133V	133V	123V	123V	

## ■ SVC KEY EXPLAIN

(S5) **BCL THD** : MAX BEAM CURRENT ADJUST,DIFFERENT DATA FOR INCH.

**BCL GAIN** : AVERAGE BEAM ADJUST.

(S6) **GEOMETRY** : PAL (50Hz) adjust.

AV NTSC is auto correction.

---> H-CENTER(-1),V-SIZE(0),V-CENTER(+600),V-LINEARITY(-6)

S-CORRECTION(0),H-PALLEL(0)

(S10) **NORMAL** : PICTURE NORMAL data setting.

(SLEEP) : TXT CHECK ON LINE

(SIZE) : GAME FUNCTION CHECK ON LINE

(S11) **OPTION**

- **HOTEL VOLUME** : HOTEL MODE MAX VOL DATA SETTING

- **HOTEL MODE OFF** : ON--> VOL MAX SET& INSTALL DONT OPERATING

\* Software option for Function Change

PIP (ON)	- ON : With PIP Models (DTC-xxxxME seiese)
	- OFF : Without PIP Models (DTC-xxxxMT seriee)
Digital EYE (ON)	- ON : Enable the Digital Sensor (for all Model)
	- OFF : Disable the Digital Sensor
LARGE (OFF)	- ON : For 29 inch Models CM-907
	- OFF : For 14~21 inch Models CM-907S
TEXT sel. (OFF)	LATIN : English,French,Swedish,Czech,German,Spanish,Italian,Estonian EAST: English,Slovakian,Hungarian,Serbian,Albanian,Polish,Turkian,Rumanian RUSSIA : English,Russian,Bulgaian,Ukrainian,Serbian,Montenegro PERSIAN : English,Farsi ARAB : English,Arabic OFF : Teletext Language depends on OSD Language selection * Note : If OSD language & text selec. is different then Teletext depends on Text selec.

### 2. Heat-Run

- Press the “S1” button of Service Remote controller for ‘HEAT-RUN’

(The CRT must be heated up at least 30min. before adjusting.)

- Press the “S1” button again to release ‘HEAT-RUN’ mode.

### 3. Screen (G2) Alignment

3-1. Screen Alignment will be performed after sufficient Heat-Run of Set.

3-2. Please check the right EEPROM DATA

- Press S11 and ‘MENU’ button in sequence,  
then the Service Main Menu will be appeared.

- Please check the right SCR BRM data in the SVC Main Menu.

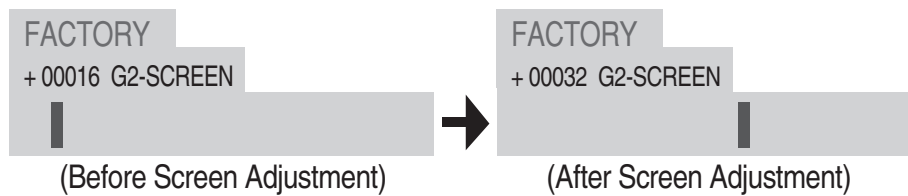
## ALIGNMENT INSTRUCTIONS

- If you decrease the SCR BRM value, the adjusted Screen Voltage will be increase.
- Recommended SCR BRM Value :  $420 \pm 20$  (It will be changed for some particular CRT)

3-3. Press the “S2” button without any signal, then the Screen OSD bar is appeared with Blue-Back screen.

3-4. Preparatory Focus (G1) Alignmet  
- You must try to Focus Alignment roughly for exact SCREEN alignmet.

3-5. Adjust the Screen Volume of FBT in order that the ‘RED’ OSD indicating Bar change to ‘BLACK’ (the numeric indicator must be 28~36)



3-6. Press the “S2” button again to release SCREEN Adjust mode.

#### 4.The adjustment of FOCUS

- 4-1. Receive PAL RETMA PATTERN(signal of company:2CH., PAL-B).
- 4-2. Adjust the picture to best distinct picture of 350 Line by revolve Focus Volume.

#### 5.The adjustment of WHITE BALANCE

- 5-1. NITSUKI Setting : Set Nitsuki to the 'Auto Mode', Reference to the 'B', and System to the 'PAL'.
- 5-2. Setting the Normal Stats
  - 5-2-1. Adjust Picture to Normal mode.
  - 5-2-2. Adjust the Gain of Nitsuki to suitability by manual when condition is Normal.
    - Adjust the standard illumination take within limit bright of Nitsuki and luminosity of SET into account.
    - Exhortative Standard illumination, : High 70Cd/m<sup>2</sup>, LOW BEAM : about 15Cd/m<sup>2</sup>
  - 5-2-3. Press the [S8]key of SVC remocon to adjustment of Whit Balance.  
X=0.288, Y=0.301
  - 5-2-4. Memorize in Nitsuki after Adjustment of White Balance.

#### 5-3. Adjustment of White Balance

- 5-3-1.Receive Nitsuki signal.
- 5-3-2.Adjust Picture to Normal mode.
- 5-3-3.The Adjustment of High Beam : Adjust R-DRIVE and G-DRIVE to R,G,B BAR come to center.
- 5-3-4.The Adjustment of Low Beam : Adjust R-BIAS and G-BIAS to R,G,B BAR come to center.
- 5-3-5.Repeat 5-3-3 and 5-3-4 to R,G,B BAR come to within center  $\pm 1$ .

#### 6.The adjustment of GEOMETRY

- 6-1. Press the [S-6]key on the SVC remocon to call up the Geometry mode.  
And then, Geometry OSD will be displayed.
- 6-1-1. All adjustment is base on PAL(50Hz),  
but it can be base on NTSC(60Hz) in case of need.
- 6-2. The adjustment of VERTICAL CENTER
  - 6-2-1.Receive PAL RETMA pattern(signal of company:PAL-B 2CH).
  - 6-2-2.Press the PR up/down Keys(▲/▼) to select V CENTER.  
Adjust with Vol Up/Down (◀/▶) keys so that the center mark of the CRT may be located on the horizontal line in the middle of the pattern. In case of no center mark, adjust with Vol Up/Down (◀/▶) keys to obtain a vertically symmetrical pattern.



## ALIGNMENT INSTRUCTIONS

### 6-3. The adjustment of VERTICAL SIZE

6-3-1. Receive PAL RETMA pattern(signal of company:PAL-B 2CH).

6-3-2. Press the PR up/down Keys (▲/▼) to select V-SIZE.

Adjust with Vol Up/Down (◀/▶) keys so that the upper and the lower of RETMA pattern may be located at the boundaries of the screen.

### 6-4. The adjustment of HORIZONTAL CENTER

6-4-1. Receive PAL RETMA pattern(signal of company:PAL-B 2CH).

6-4-2. Press the PR up/down Keys (▲/▼) to select V-SIZE.

Referring to the both side scales, adjust with Vol Up/Down (◀/▶) keys so that RETMA pattern may be symmetrical.

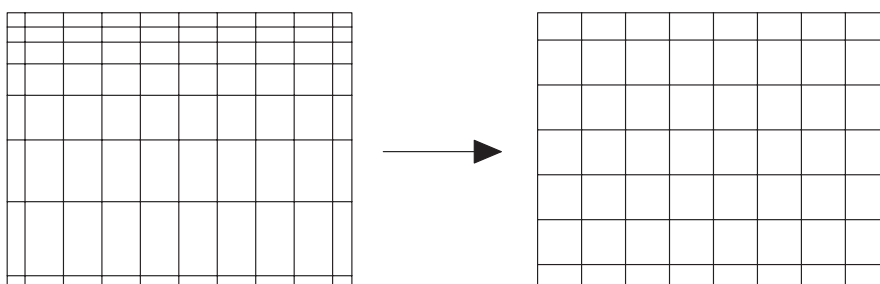
### 6-5. The adjustment of Vertical Linearity

6-5-1. Receive PAL CROSSHATCH pattern(signal of company:PAL-B 5CH).

6-5-2. Fix adjustment of Vertical Linearity after EEPROM presetting, but it can be adjusted in case of need.

6-5-3. Press the PR up/down Keys (▲/▼) to select V LINEAR.

Adjust Vertical Linearity with Vol Up/Down (◀/▶) keys.



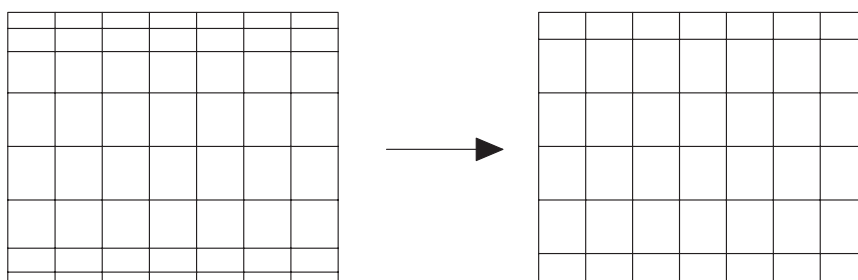
### 6-6. The adjustment of VERTICAL S-Correction

6-6-1. Receive PAL CROSSHATCH pattern(signal of company:PAL-B 5CH).

6-6-2. Fix adjustment of Vertical S-Correction after EEPROM DATA presetting, but it can be adjusted in case of need.

6-6-3. Press the PR up/down Keys (▲/▼) to select S CORRECT.

Adjust S-Correction with Vol Up/Down (◀/▶) keys.



## 7. THE ADJUSTMENT OF SUB-PICTURE (SUB-BRIGHT, SUB-CONTRAST)

7-1. Receive PAL RETMA PATTERN(signal of company:2CH., PAL-B)

7-2. Press the [S9] KEY of SVC Remocon, BRM OSD will be displayed.

7-3. The adjustment of SUB-BRIGHT

7-3-1. Press the PR up/down Keys (▲/▼) to select SUB-BRIGHT in SUB-PICTURE MENU.

Adjust SUB-BRIGHT with Vol Up/Down (◀/▶) keys.

7-3-2. Adjust With BRM, When SUB-BRIGHT is lacking in margin of adjustment.

7-3-3. Standard of adjustment : Adjust till instant of 1, 2th cordon disappear in RETMA CONTRAST CHART(signal of company).

7-3-4. When Sub-Picture mode was exited after SUB's adjustment, Normal vlaue is brighter(about 18%) than adjustment-point(about 10%) of adjustment-mode because BRIGHT is set to rise 2~3 step.

## 8. THE ADJUSTMENT OF PIP

8-1. Receive PAL RETMA pattern(signal of company:PAL-B 2CH) and Color Bar.

8-2. Press the [S7] KEY of SVC Remocon, PIP-Adjustment OSD will be displayed.

8-3. Fix adjustment of PIP after EEPROM DATA presetting,  
but it can be adjusted in case of need.

8-4. Adjust PIP after GEOMETRY, WHITE BALANCE and SUB-BRIGHT are adjusted.

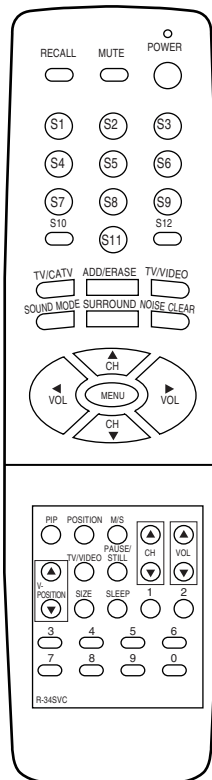
8-5. List of adjustment

- ① PIP H POSITON : Adjustment of H-position Sub-Picture,  
(Reference : Presetting Value of EEPROM = 45)
- ② PIP V POSITON : Adjustment of V-position of Sub-Picture,  
(Reference : Presetting Value of EEPROM = 30)
- ③ PIP R/G/B Peak : Adjustment of Gain of PIP IC R,G,B Output  
(Reference : Presetting Value of EEPROM = 130)
- ④ P CONTRAST : Adjustment of AC Gain(Contrast) of PIP IC RGB Output  
(Reference : Presetting Value of EEPROM = 04)
- ⑤ P BRIGHT : Adjustment of DC Level(SUB BRIGHT) of PIP IC RGB Output  
(Reference : Presetting Value of EEPROM = 00)

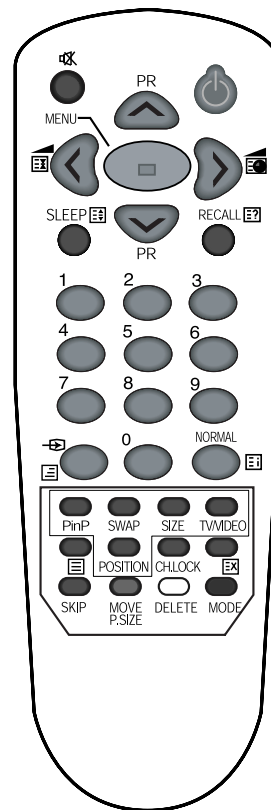
## ALIGNMENT INSTRUCTIONS

### 9. REMOCON

#### 9-1. SERVICE REMOCON



#### 9-2. USER REMOCON



#### 9-3. SERVICE REMOCON

- 1) Enter SERVICE MODE : Press keys of User Remocon, as follows.  
Ch91, Sharpness 0, Skip(red), Move(green), Menu.
- 2) Choice SERVICE MENU : Pr-Up/Down
- 3) Enter SERVICE SUB MENU : Vol-Up/Down
- 4) Adjust SERVICE MENU : Vol-Up/Down

## 6. ELECTRICAL PARTS LIST

### DTC-21D9ME

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
ZZ100	TRANSMITTER REMOCON	48B4844C13	R-44C13 (AA)	1
0100	BATTERY	4850Q00810	R6P/LN	2
ZZ131	CRT GROUND NET	48519A5310	2101S-1015-1P	1
ZZ132	COIL DEGAUSSING	58G0000147	DC-21SF	1
V901	CRT	4859640860	A51AEZ90X27 P38	1
P601A	CONNECTOR	4850704S31	YH025-04+YRT205+ULW800400	1
SP01	SPEAKER	4858311110	12W 8 OHM SP-58126F	1
SP02	SPEAKER	4858311110	12W 8 OHM SP-58126F	1
C403	C MYLAR	CMYH3C722J	1.6KV BUP 7200PF J	1
C407	C MYLAR	CMYE2D274J	200V PU 0.27MF J	1
C801	C LINE ACROSS	CL1UC3474M	0.47MF 1J(UCVSNDF/SV)+Q/O	1
C804	C ELECTRO	CEYD2W151D	450V FHS 150MF (25X40)	1
C811	C CERA AC	CH1BFE222M	U/C/V AC400V 2200PF	1
D809	DIODE	DRGP30J—	RGP30J DO-201AD 600V 3A	1
D813	DIODE	DRGP30J—	RGP30J DO-201AD 600V 3A	1
D817	DIODE	DRGP30J—	RGP30J DO-201AD 600V 3A	1
DE01	LED HOLDER AS	DLH2PRS5MH3	LH-2P-R-5M-H3	1
HP01	JACK EARPHONE	4859102130	YSC-1537	1
I301	IC VERTICAL	1LA78041—	LA78041	1
I301A	HEAT SINK	4857027100	SPCC T1.0+SN	1
I301B	SCREW TAPPTITE	7174300811	TT2 RND 3X8 MFZN	1
I501	IC MICOM	1DW3832GB1	VCT3832-GB1	1
I601	IC AUDIO AMP	1TDA8946J	TDA8946J	1
I601A	HEAT SINK	4857028217	AL EX	1
I601B	SCREW TAPPTITE	7174301011	TT2 RND 3X10 MFZN	2
I602	IC AUDIO PROCESSOR	1TDA7442—	TDA7442	1
I701	IC MEMORY	1CAT24C32P	CAT24WC32P	1
I801	IC POWER	1STRW6754	STR-W6754	1
I801A	HEAT SINK	4857026120	AL EX BK	1
I801B	SCREW TAPPTITE	7174300811	TT2 RND 3X8 MFZN	1
I804	IC REGULATOR	1L7805CV—	L7805CV	1
I901	IC VIDEO AMP	1TDA6107Q-	TDA6107Q	1
I901A	HEAT SINK	4857031300	A1050P-H24 T1.6	1
I901B	SCREW TAPPTITE	7174301011	TT2 RND 3X10 MFZN	1
ID01	IC PHOTO SENSOR	1PNA4603H-	PNA4603H	1
IF01	IC PREAMP	1TS0P1238W	TS0P1238W11	1
JP01	JACK PIN BOARD	4859110950	YS01-0001	1
JP02	JACK PIN BOARD	4859108450	YSC03P-4120-14A	1
JP03	JACK PIN BOARD	4859111750	PH-JB-9515	1
L401	COIL H-LINEARITY	58H0000020	L-76(76.5UH)	1
LF801	FILTER LINE	5PLF24A1—	LF-24A1	1
P401	CONN WAFER	4859240120	YFW500-06	1
P901	CONNECTOR	4850708N08	BIC-08T-25T+C-20T+ULW=400	1
PD01A	CONNECTOR	4850703S18	YH025-03+YBNH250+ULW=200	1
PW801	CORD POWER AS	4859903110	KKP-419J-H03VVH2+H0U=2200	1
Q402	TR HORI	TST1803DH-	ST1803DHI	1
Q402A	HEAT SINK	4857027200	AL T1.0	1
Q402B	SCREW TAPPTITE	7174301011	TT2 RND 3X10 MFZN	1
R801	POSISTOR	DDC7R0M290	ECPCD7R0M290	1
R802	R CEMENT	RX07B229JP	7W 2.2 OHM J BEN 15MM 4P	1
SC01	SOCKET CRT	4859304130	ISHG93S	1
SW801	SW POWER PUSH	5S40101143	PS3-22SP (P.C.B)	1
T401	FBT	50H0000256	FFA69023M	1
T402	TRANS DRIVE	50D10A3—	TD-10A3	1
T801	TRANS SMPS	50M4042B3-	TSM-4042B3	1
U100	TUNER VARACTOR	4859723730	TMDG1-837	1
X501	CRYSTAL QUARTZ	5XE20R250E	HC-49/U 20.2500MHZ 30PPM	1
XP01	CRYSTAL QUARTZ	5XE20R250E	HC-49/U 20.2500MHZ 30PPM	1
CC105	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CC106	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CC301	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
CC302	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CC304	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CC306	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CC310	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CC414	C CHIP CERA	HCQK101JBA	50V CH 100PF J 1608	1
CC505	C CHIP CERA	HCBK473KBA	50V X7R 0.047MF K 1608	1
CC508	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CC515	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CC521	C CHIP CERA	HCQK151JBA	50V CH 150PF J 1608	1
CC523	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC525	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC530	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC531	C CHIP CERA	HCQK309CBA	CH 50V 3PF C 1608	1
CC532	C CHIP CERA	HCQK309CBA	CH 50V 3PF C 1608	1
CC533	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CC534	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CC535	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CC546	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC607	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC608	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC609	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC611	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC612	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CC613	C CHIP CERA	HCBK562KBA	X7R 50V 5600PF K 1608	1
CC614	C CHIP CERA	HCBK562KBA	X7R 50V 5600PF K 1608	1
CC618	C CHIP CERA	HCBK562KBA	X7R 50V 5600PF K 1608	1
CC619	C CHIP CERA	HCBK562KBA	X7R 50V 5600PF K 1608	1
CC623	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CC624	C CHIP CERA	HCFF224ZBA	16V Y5V 0.22MF Z 1608	1
CC625	C CHIP CERA	HCFF224ZBA	16V Y5V 0.22MF Z 1608	1
CC626	C CHIP CERA	HCFF224ZBA	16V Y5V 0.22MF Z 1608	1
CC628	C CHIP CERA	HCFF224ZBA	16V Y5V 0.22MF Z 1608	1
CC637	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CC638	C CHIP CERA	HCBK472KBA	50V X7R 4700PF K 1608	1
CC639	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CC640	C CHIP CERA	HCBK472KBA	50V X7R 4700PF K 1608	1
CCA01	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CCA02	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CCA04	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA05	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA08	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA10	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA12	C CHIP CERA	HCQK221JBA	50V CH 220PF J 1608	1
CCA14	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA16	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA17	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCA20	C CHIP CERA	HCBK102KBA	50V X7R 1000PF K 1608	1
CCD01	C CHIP CERA	HCBH104KBA	25V X7R 0.1MF K 1608	1
CCP01	C CHIP CERA	HCQK240JBA	50V CH 24PF J 1608	1
CCP02	C CHIP CERA	HCQK240JBA	50V CH 24PF J 1608	1
CCP05	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CCP12	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CCP14	C CHIP CERA	HCQK561JBA	50V CH 560PF J 1608	1
CCP16	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CCP20	C CHIP CERA	HCBK103KBA	50V X7R 0.01MF K 1608	1
CCP22	C CHIP CERA	HCQK561JBA	50V CH 560PF J 1608	1
I802	IC CHIP PHOTO COUPLER	ILTV817C-Q	LTV-817C TRAY	1
IP01	IC CHIP PIP	1SDA9488XE	SDA9488X	1
RC102	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RC103	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RC106	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1

# ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
RC107	R CHIP	HRFT512JBA	1/10 5.1K OHM J 1608	1
RC108	R CHIP	HRFT221JBA	1/10 220 OHM J 1608	1
RC109	R CHIP	HRFT331JBA	1/10 330 OHM J 1608	1
RC111	R CHIP	HRFT221JBA	1/10 220 OHM J 1608	1
RC112	R CHIP	HRFT331JBA	1/10 330 OHM J 1608	1
RC114	R CHIP	HRFT330JBA	1/10 33 OHM J 1608	1
RC127	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RC305	R CHIP	HRFT471JBA	1/10 470 OHM J 1608	1
RC306	R CHIP	HRFT152JBA	1/10 1.5K OHM J 1608	1
RC503	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RC506	R CHIP	HRFT203JBA	1/10 20K OHM J 1608	1
RC508	R CHIP	HRFT103JBA	1/10 10K OHM J 1608	1
RC511	R CHIP	HRFT122JBA	1/10 1.2K OHM J 1608	1
RC512	R CHIP	HRFT223JBA	1/10 22K OHM J 1608	1
RC515	R CHIP	HRFT472JBA	1/10 4.7K OHM J 1608	1
RC516	R CHIP	HRFT682JBA	1/10 6.8K OHM J 1608	1
RC518	R CHIP	HRFT103JBA	1/10 10K OHM J 1608	1
RC519	R CHIP	HRFT471JBA	1/10 470 OHM J 1608	1
RC520	R CHIP	HRFT271JBA	1/10 270 OHM J 1608	1
RC522	R CHIP	HRFT472JBA	1/10 4.7K OHM J 1608	1
RC528	R CHIP	HRFT562JBA	1/10 5.6K OHM J 1608	1
RC533	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RC534	R CHIP	HRFT220JBA	1/10W 22 OHM J 1608	1
RC547	R CHIP	HRFT182JBA	1/10 1.8K OHM J 1608	1
RC548	R CHIP	HRFT223JBA	1/10 22K OHM J 1608	1
RC602	R CHIP	HRFT431JBA	1/10 430 OHM J 1608	1
RC603	R CHIP	HRFT562JBA	1/10 5.6K OHM J 1608	1
RC604	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RC611	R CHIP	HRFT133JBA	1/10 13K OHM J 1608	1
RC612	R CHIP	HRFT133JBA	1/10 13K OHM J 1608	1
RC614	R CHIP	HRFT223JBA	1/10 22K OHM J 1608	1
RC615	R CHIP	HRFT221JBA	1/10 220 OHM J 1608	1
RC619	R CHIP	HRFT829JBA	1/10 8.2 OHM J 1608	1
RC620	R CHIP	HRFT829JBA	1/10 8.2 OHM J 1608	1
RC621	R CHIP	HRFT829JBA	1/10 8.2 OHM J 1608	1
RC698	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RC699	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RC814	R CHIP	HRFT103JBA	1/10 10K OHM J 1608	1
RC815	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RC819	R CHIP	HRFT103JBA	1/10 10K OHM J 1608	1
RC820	R CHIP	HRFT103JBA	1/10 10K OHM J 1608	1
RC832	R CHIP	HRFT222JBA	1/10 2.2K OHM J 1608	1
RC835	R CHIP	HRFT561JBA	1/10 560 OHM J 1608	1
RC838	R CHIP	HRFT331JBA	1/10 330 OHM J 1608	1
RC843	R CHIP	HRFT471JBA	1/10 470 OHM J 1608	1
RC844	R CHIP	HRFT221JBA	1/10 220 OHM J 1608	1
RC845	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RC899	R CHIP	HRFT301JBA	1/10 300 OHM J 1608	1
RC902	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RC903	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RCA01	R CHIP	HRFT820JBA	1/10 82 OHM J 1608	1
RCA03	R CHIP	HRFT820JBA	1/10 82 OHM J 1608	1
RCA05	R CHIP	HRFT820JBA	1/10 82 OHM J 1608	1
RCA07	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RCA09	R CHIP	HRFT820JBA	1/10 82 OHM J 1608	1
RCA15	R CHIP	HRFT101JBA	1/10 100 OHM J 1608	1
RCD01	R CHIP	HRFT511JBA	1/10 510 OHM J 1608	1
RCD02	R CHIP	HRFT222JBA	1/10 2.2K OHM J 1608	1
RCF71	R CHIP	HRFT102JBA	1/10 1K OHM J 1608	1
RCF75	R CHIP	HRFT152JBA	1/10 1.5K OHM J 1608	1
RCF76	R CHIP	HRFT822JBA	1/10 8.2K OHM J 1608	1

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
RCP07	R CHIP	HRFT221JBA	1/10 220 OHM J 1608	1
ZZ200	PCB MAIN (RHU) AS	PTMPJ0D837	DTR-21D9ME	1
C103	C ELECTRO	CEXF1C222V	16V RSS 2200MF (16X31.5) TP	1
C311	C ELECTRO	CEXF1E471V	25V RSS 470MF (10X16) TP	1
C312	C ELECTRO	CEXF1E471V	25V RSS 470MF (10X16) TP	1
C410	C ELECTRO	CEXF2E100V	250V RSS 10MF (10X20) TP	1
C522	C ELECTRO	CEXF1C471V	16V RSS 470MF (8X12)TP	1
C545	C ELECTRO	CEXF1C471V	16V RSS 470MF (8X12)TP	1
C805	C CERA	CCXR3D681K	2KV R 680PF K 125C	1
C812	C CERA SEMI	CBXB3D471K	2KV BL(N) 470PF K (T)	1
C813	C ELECTRO	CEXF2C101V	160V RSS 100MF (16X25) TP	1
C814	C ELECTRO	CEXF2C101V	160V RSS 100MF (16X25) TP	1
C816	C ELECTRO	CEXF1C222V	16V RSS 2200MF (16X31.5) TP	1
C817	C ELECTRO	CEXF1C222V	16V RSS 2200MF (16X31.5) TP	1
C818	C ELECTRO	CEXF1E222V	25V RSS 2200MF (16X25) TP	1
C823	C ELECTRO	CEXF1C471V	16V RSS 470MF (8X12)TP	1
C826	C ELECTRO	CEXF1C471V	16V RSS 470MF (8X12)TP	1
C827	C ELECTRO	CEXF1C471V	16V RSS 470MF (8X12)TP	1
C902	C CERA SEMI	CBXB3D102K	2KV BL(N) 1000PF K (T)	1
ZZ200	PCB MAIN M-10 AS	PTMPJBD837	DTR-21D9ME	1
10	TAPE MASKING	2TM18006BE	6.2X500	0.38
E401	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E402	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E403	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E404	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E405	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E406	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E407	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E409	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E410	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E411	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E412	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E413	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E414	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E415	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E416	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E417	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E601	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E602	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E801	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E802	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E803	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E804	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E805	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E806	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E807	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E808	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E809	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E810	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E811	EYE LET	4856310300	BSR T0.2 (R1.6)	1
E812	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E813	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E814	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E815	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E816	EYE LET	4856310600	BSR T0.2 (R2.3)	1
E817	EYE LET	4856310600	BSR T0.2 (R2.3)	1
N801	TERM PIN	4857417500	DA-IB0214(D2.3/DY PIN)	1
N802	TERM PIN	4857417500	DA-IB0214(D2.3/DY PIN)	1
N803	TERM PIN	4857417500	DA-IB0214(D2.3/DY PIN)	1
N804	TERM PIN	4857417500	DA-IB0214(D2.3/DY PIN)	1
P601	CONN WAFER	485923172S	YW025-04 (STICK)	1

## ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
PD01	CONN WAFER	485923162S	YW025-03 (STICK)	1
R308	R M-OXIDE FILM	RS02Z221JS	2W 220 OHM J SMALL	1
R313	R M-OXIDE FILM	RS02Z229JS	2W 2.2 OHM J SMALL	1
R314	R M-OXIDE FILM	RS02Z229JS	2W 2.2 OHM J SMALL	1
R403	R M-OXIDE FILM	RS02Z102JS	2W 1K OHM J SMALL	1
R405	R M-OXIDE FILM	RS02Z102JS	2W 1K OHM J SMALL	1
R406	R M-OXIDE FILM	RS02Z103JS	2W 10K OHM J SMALL	1
R408	R M-OXIDE FILM	RS02Z100JS	2W 10 OHM J SMALL	1
R411	R M-OXIDE FILM	RS02Z309JS	2W 3 OHM J SMALL	1
R805	R M-OXIDE FILM	RS02Z228JS	2W 0.22 OHM J SMALL	1
R828	R M-OXIDE FILM	RS02Z220JS	2W 22 OHM J SMALL	1
R831	R M-OXIDE FILM	RS02Z100JS	2W 10 OHM J SMALL	1
R839	R M-OXIDE FILM	RS02Z240JS	2W 24 OHM J SMALL	1
R840	R M-OXIDE FILM	RS02Z240JS	2W 24 OHM J SMALL	1
ZZ200	PCB MAIN RADIAL AS	PTMPJRD837	DTR-21D9ME	1
C101	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C303	C MYLAR	CMXM2A223J	100V 0.022MF J TP	1
C305	C CERA	CXSL2H100D	500V SL 10PF D (TAPPING)	1
C307	C ELECTRO	CEXF1H101V	50V RSS 100MF (8X11.5) TP	1
C308	C MYLAR	CMXM2A104J	100V 0.1MF J (TP)	1
C401	C MYLAR	CMXM2A104J	100V 0.1MF J (TP)	1
C402	C CERA	CCXB2H102K	500V B 1000PF K (TAPPING)	1
C405	C CERA	CCXB2H561K	500V B 560PF K (TAPPING)	1
C406	C ELECTRO	CEXF2C229V	160V RSS 2.2MF (8X11.5) TP	1
C411	C CERA	CXSL2H470J	500V SL 47PF J (TAPPING)	1
C412	C MYLAR	CMXM2A104J	100V 0.1MF J (TP)	1
C501	C ELECTRO	CEXF1E101V	25V RSS 100MF (6.3X11) TP	1
C504	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C506	C ELECTRO	CEXF1C221V	16V RSS 220MF (8X11.5) TP	1
C509	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C510	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C511	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C512	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C513	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C514	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C517	C ELECTRO	CEXF1E101V	25V RSS 100MF (6.3X11) TP	1
C526	C ELECTRO	CEXF1H339V	50V RSS 3.3MF (5X11) TP	1
C527	C ELECTRO	CEXF1E101V	25V RSS 100MF (6.3X11) TP	1
C528	C ELECTRO	CEXF1E101V	25V RSS 100MF (6.3X11) TP	1
C529	C ELECTRO	CEXF1H220V	50V RSS 22MF (5X11) TP	1
C537	C ELECTRO	CEXF1C221V	16V RSS 220MF (8X11.5) TP	1
C538	C ELECTRO	CEXF1E470V	25V RSS 47MF (5X11) TP	1
C539	C CERA	CCXB1H471K	50V B 470PF K (TAPPING)	1
C540	C CERA	CCXB1H471K	50V B 470PF K (TAPPING)	1
C541	C CERA	CCXB1H471K	50V B 470PF K (TAPPING)	1
C601	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C602	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C603	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C604	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C605	C ELECTRO	CEXF1H479V	50V RSS 4.7MF (5X11) TP	1
C606	C ELECTRO	CEXF1H479V	50V RSS 4.7MF (5X11) TP	1
C615	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C616	C ELECTRO	CEXF1E470V	25V RSS 47MF (5X11) TP	1
C620	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C621	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C622	C ELECTRO	CEXF1E470V	25V RSS 47MF (5X11) TP	1
C627	C ELECTRO	CEXF1H220V	50V RSS 22MF (5X11) TP	1
C630	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C631	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C636	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C701	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
C802	C CERA	CCXF3A472Z	1KV F 4700PF Z (T)	1
C803	C CERA	CCXF3A472Z	1KV F 4700PF Z (T)	1
C806	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
C807	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
C808	C CERA	CCXB1H471K	50V B 470PF K (TAPPING)	1
C815	C ELECTRO	CEXF2A100V	100V RSS 10MF (6.3X11) TP	1
C819	C MYLAR	CMXL2E104K	250V MEU 0.1MF K	1
C820	C MYLAR	CMXM2A104J	100V 0.1MF J (TP)	1
C822	C ELECTRO	CEXF1C221V	16V RSS 220MF (8X11.5) TP	1
C825	C ELECTRO	CEXF1C221V	16V RSS 220MF (8X11.5) TP	1
C901	C MYLAR	CMXL2E104K	250V MEU 0.1MF K	1
CA06	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
CA07	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
CA09	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
CA11	C ELECTRO	CEXF1H109V	50V RSS 1MF (5X11) TP	1
CA21	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
CD02	C ELECTRO	CEXF1E470V	25V RSS 47MF (5X11) TP	1
CF01	C ELECTRO	CEXF1E470V	25V RSS 47MF (5X11) TP	1
CP06	C ELECTRO	CEXF1H470V	50V RSS 47MF (6.3X11) TP	1
CP07	C CERA	CCXB1H103K	50V B 0.01MF K	1
CP08	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
CP10	C CERA	CCXB1H103K	50V B 0.01MF K	1
CP11	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
CP13	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11) TP	1
CP17	C ELECTRO	CEXF1H229V	50V RSS 2.2MF (5X11) TP	1
CP21	C ELECTRO	CEXF1H229V	50V RSS 2.2MF (5X11) TP	1
F801	FUSE	5FWPS4022L	WIDE TL 250V 4A CASE	1
G901	SPARK GAP	4SG0DX0001	SSG-102-A1(1.0KV) TAP	1
G902	SPARK GAP	4SG0DX0001	SSG-102-A1(1.0KV) TAP	1
G903	SPARK GAP	4SG0DX0001	SSG-102-A1(1.0KV) TAP	1
G904	SPARK GAP	4SG0DX0001	SSG-102-A1(1.0KV) TAP	1
I803	IC REGULATOR	1H431CA—	H431CA 0.5% TO-92	1
L802	COIL CHOKE	58CX430599	AZ-9004Y 940K TP	1
Q102	TR	TKTC3198Y-	KTC3198Y	1
Q103	TR	TKTC3198Y-	KTC3198Y	1
Q401	TR	TKTC3207—	KTC3207 (TP)	1
Q403	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q502	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q503	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q504	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q505	TR	TKTC3198Y-	KTC3198Y	1
Q507	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q510	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q514	TR	TKTC3198Y-	KTC3198Y	1
Q515	TR	TKTC3198Y-	KTC3198Y	1
Q516	TR	TKTC3198Y-	KTC3198Y	1
Q601	TR	TKTC3198Y-	KTC3198Y	1
Q603	TR	TKTC3198Y-	KTC3198Y	1
Q802	TR	TKTC3198Y-	KTC3198Y	1
Q803	TR	TKTC3198Y-	KTC3198Y	1
Q804	TR	TKTA1266Y-	KTA1266Y (TP)	1
Q805	TR	TKTC3198Y-	KTC3198Y	1
Q806	TR	TKTA1281Y-	KTA1281Y	1
Q807	TR	TKTC3198Y-	KTC3198Y	1
Q808	TR	TKTC3205Y-	KTC3205Y (TP)	1
Q809	TR	TKTC3205Y-	KTC3205Y (TP)	1
Q810	TR	TKTC3198Y-	KTC3198Y	1
Q811	TR	TKTC3198Y-	KTC3198Y	1
Q812	TR	TKTC3198Y-	KTC3198Y	1
Q813	TR	TKTA1270Y-	KTA1270Y (TP)	1
Q814	TR	TKTC3198Y-	KTC3198Y	1



# ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
Q899	TR	TKTC3198Y-	KTC3198Y	1
QA01	TR	TKTC3198Y-	KTC3198Y	1
QE01	TR	TKTC3198Y-	KTC3198Y	1
R824	R METAL FILM	RN02B390JS	2W 39 OHM J SMALL	1
R825	R METAL FILM	RN02B390JS	2W 39 OHM J SMALL	1
R826	R METAL FILM	RN02B390JS	2W 39 OHM J SMALL	1
R827	R METAL FILM	RN02B390JS	2W 39 OHM J SMALL	1
R829	R METAL FILM	RN02B569JS	2W 5.6 OHM J SMALL	1
R904	R METAL FILM	RN01B101JS	1W 100 OHM J SMALL	1
SW701	SW TACT	5S50101090	THVH472GCA	1
SW702	SW TACT	5S50101090	THVH472GCA	1
SW703	SW TACT	5S50101090	THVH472GCA	1
SW704	SW TACT	5S50101090	THVH472GCA	1
SW705	SW TACT	5S50101090	THVH472GCA	1
SW706	SW TACT	5S50101090	THVH472GCA	1
ZZ200	PCB MAIN AXIAL AS	PTMPJAD837	DTR-21D9ME	1
10	TAPE MASKING	2TM14006LB	3M #232 6.0X2000M	3.89
20	TAPE MASKING	2TM10006LB	3M #232-MAP-C 6.2X2000M	3.89
A001	PCB MAIN	4859804896	330X246 C1B	1
C408	C CERA SEMI	CBZF1H104Z	50V F 0.1MF Z	1
C518	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
C519	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
C520	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
C610	C CERA SEMI	CBZF1H104Z	50V F 0.1MF Z	1
C632	C CERA SEMI	CBZF1H104Z	50V F 0.1MF Z	1
C633	C CERA SEMI	CBZF1H104Z	50V F 0.1MF Z	1
C634	C CERA SEMI	CBZF1H104Z	50V F 0.1MF Z	1
C635	C CERA SEMI	CBZF1H104Z	50V F 0.1MF Z	1
C809	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
C810	C CERA	CCZB1H821K	50V B 820PF K AXIAL	1
CA03	C CERA	CCZB1H221K	50V B 220PF K (AXIAL)	1
CA13	C CERA	CCZB1H221K	50V B 220PF K (AXIAL)	1
CA15	C CERA	CCZB1H102K	50V B 1000PF K (AXIAL)	1
CP15	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
CP18	C CERA	CCZB1H561K	50V B 560PF K	1
CP19	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
CP23	C CERA	CCZF1H473Z	50V F 0.047MF Z	1
D101	DIODE ZENER	DUZ33B—	UZ-33B	1
D301	DIODE	D1N4004S—	1N4004S	1
D302	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D303	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D304	DIODE	D1N4148—	1N4148 (TAPPING)	1
D305	DIODE	D1N4148—	1N4148 (TAPPING)	1
D401	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D402	DIODE	D1N4148—	1N4148 (TAPPING)	1
D403	DIODE	D1N4148—	1N4148 (TAPPING)	1
D404	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D501	DIODE	D1N4148—	1N4148 (TAPPING)	1
D502	DIODE ZENER	DUZ2R7B—	UZ-2.7B	1
D503	DIODE	D1N4148—	1N4148 (TAPPING)	1
D504	DIODE	D1N4148—	1N4148 (TAPPING)	1
D505	DIODE ZENER	DUZ5R6BM—	UZ-5.6BM	1
D506	DIODE	D1N4148—	1N4148 (TAPPING)	1
D507	DIODE	D1N4148—	1N4148 (TAPPING)	1
D508	DIODE	D1N4148—	1N4148 (TAPPING)	1
D511	DIODE	D1N4148—	1N4148 (TAPPING)	1
D512	DIODE	D1N4148—	1N4148 (TAPPING)	1
D513	DIODE	D1N4148—	1N4148 (TAPPING)	1
D514	DIODE	D1N4148—	1N4148 (TAPPING)	1
D801	DIODE	DLT2A05G—	LT2A05G (TP)	1
D802	DIODE	DLT2A05G—	LT2A05G (TP)	1

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
D803	DIODE	DLT2A05G—	LT2A05G (TP)	1
D804	DIODE	DLT2A05G—	LT2A05G (TP)	1
D805	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D806	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D807	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D808	DIODE ZENER	DUZ6R2BM—	UZ-6.2BM	1
D811	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D814	DIODE ZENER	DUZ5R1B—	UZ-5.1B	1
D815	DIODE	D1N4148—	1N4148 (TAPPING)	1
D816	DIODE ZENER	DUZ2R7B—	UZ-2.7B	1
D818	DIODE ZENER	DUZ5R6BM—	UZ-5.6BM	1
D819	DIODE	D1N4937G—	1N4937G (TAPPING)	1
D820	DIODE ZENER	DUZ2R7B—	UZ-2.7B	1
D898	DIODE	D1N4148—	1N4148 (TAPPING)	1
D899	DIODE ZENER	DUZ9R1BM—	UZ-9.1BM	1
J001	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J002	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J003	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J004	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J005	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J006	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J007	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J008	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J009	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J010	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J012	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J015	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J016	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J017	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J018	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J019	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J020	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J021	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J022	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J023	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J025	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J026	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J027	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J028	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J029	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J030	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J031	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J032	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J033	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J034	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J035	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J036	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J037	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J038	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J039	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J040	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J041	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J042	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J043	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J044	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J045	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J046	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J047	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J048	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J049	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J050	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05

## ELECTRICAL PARTS LIST

[illegible]

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
J217	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J218	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J219	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J230	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J231	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J232	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J233	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J234	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J235	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J236	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J237	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J238	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J239	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J240	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J241	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J242	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J243	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J244	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J245	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J246	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J247	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J248	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J249	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J250	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J251	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J252	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J253	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J255	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J256	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J257	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J258	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J259	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J260	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J261	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J262	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J263	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J401	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J402	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J403	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J404	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J405	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J406	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J407	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J801	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
J802	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
JA601	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
JA602	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
JD01	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
JT01	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
JT02	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
L101	COIL PEAKING	5CPZ100K04	10UH 10.5MM K (LAL04TB)	1
L301	COIL BEAD	5MC0000100	HC-3550	1
L402	COIL PEAKING	5CPZ109M02	1UH M (AXIAL 3.5MM)	1
L501	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
L502	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
L503	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
L504	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
L505	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
L601	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
L602	COIL BEAD	5MC0000100	HC-3550	1
L603	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1



# ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
L604	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
L701	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
L801	COIL BEAD	5MC0000100	HC-3550	1
LA01	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
LA02	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
LA03	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
LA04	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA05	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA06	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA07	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA08	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA09	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA10	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
LA11	COIL PEAKING	5CPZ479K02	4.7UH K (AXIAL 3.5MM)	1
LA12	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA13	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LA15	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LP01	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LP02	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LP03	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
LP04	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	1
R101	R CARBON FILM	RD-2Z332J-	1/2 3.3K OHM J	1
R104	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R301	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R302	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R303	R CARBON FILM	RD-AZ332J-	1/6 3.3K OHM J	1
R304	R CARBON FILM	RD-AZ332J-	1/6 3.3K OHM J	1
R307	R CARBON FILM	RD-AZ152J-	1/6 1.5K OHM J	1
R309	R CARBON FILM	RD-2Z129J-	1/2 1.2 OHM J	1
R310	R CARBON FILM	RD-2Z129J-	1/2 1.2 OHM J	1
R312	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
R401	R CARBON FILM	RD-AZ472J-	1/6 4.7K OHM J	1
R402	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R404	R CARBON FILM	RD-AZ472J-	1/6 4.7K OHM J	1
R407	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
R409	R CARBON FILM	RD-4Z223J-	1/4 22K OHM J	1
R410	R CARBON FILM	RD-4Z333J-	1/4 33K OHM J	1
R412	R CARBON FILM	RD-4Z562J-	1/4 5.6K OHM J	1
R501	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R505	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R507	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R509	R CARBON FILM	RD-AZ223J-	1/6 22K OHM J	1
R510	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
R513	R CARBON FILM	RD-AZ271J-	1/6 270 OHM J	1
R514	R CARBON FILM	RD-AZ222J-	1/6 2.2K OHM J	1
R517	R CARBON FILM	RD-AZ221J-	1/6 220 OHM J	1
R523	R CARBON FILM	RD-AZ104J-	1/6 100K OHM J	1
R524	R CARBON FILM	RD-AZ152J-	1/6 1.5K OHM J	1
R525	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R526	R CARBON FILM	RD-AZ152J-	1/6 1.5K OHM J	1
R527	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R531	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R535	R CARBON FILM	RD-AZ181J-	1/6 180 OHM J	1
R536	R CARBON FILM	RD-AZ181J-	1/6 180 OHM J	1
R537	R CARBON FILM	RD-AZ181J-	1/6 180 OHM J	1
R538	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
R539	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
R540	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
R541	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R542	R CARBON FILM	RD-AZ271J-	1/6 270 OHM J	1
R543	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
R544	R CARBON FILM	RD-AZ271J-	1/6 270 OHM J	1
R545	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R546	R CARBON FILM	RD-AZ271J-	1/6 270 OHM J	1
R601	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R605	R CARBON FILM	RD-AZ562J-	1/6 5.6K OHM J	1
R606	R CARBON FILM	RD-AZ562J-	1/6 5.6K OHM J	1
R607	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R608	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R609	R CARBON FILM	RD-AZ183J-	1/6 18K OHM J	1
R610	R CARBON FILM	RD-AZ183J-	1/6 18K OHM J	1
R613	R CARBON FILM	RD-AZ223J-	1/6 22K OHM J	1
R617	R CARBON FILM	RD-4Z151J-	1/4 150 OHM J	1
R618	R CARBON FILM	RD-4Z151J-	1/4 150 OHM J	1
R622	R CARBON FILM	RD-AZ829J-	1/6 8.2 OHM J	1
R623	R CARBON FILM	RD-4Z100J-	1/4 10 OHM J	1
R701	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R702	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R804	R CARBON FILM	RD-2Z104J-	1/2 100K OHM J	1
R806	R CARBON FILM	RD-4Z100J-	1/4 10 OHM J	1
R807	R CARBON FILM	RD-AZ152J-	1/6 1.5K OHM J	1
R808	R CARBON FILM	RD-4Z221J-	1/4 220 OHM J	1
R809	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R810	R CARBON COMP	RC-2Z565KP	1/2 5.6M OHM K	1
R811	R METAL FILM	RN-4Z1003F	1/4 100K OHM F	1
R812	R METAL FILM	RN-4Z6801F	1/4 6.8K OHM F	1
R813	R METAL FILM	RN-4Z2201F	1/4 2.20K OHM F	1
R817	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R818	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R821	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
R822	R CARBON FILM	RD-4Z100J-	1/4 10 OHM J	1
R833	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R834	R CARBON FILM	RD-AZ473J-	1/6 47K OHM J	1
R836	R CARBON FILM	RD-AZ561J-	1/6 560 OHM J	1
R837	R CARBON FILM	RD-AZ473J-	1/6 47K OHM J	1
R841	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R842	R CARBON FILM	RD-AZ361J-	1/6 360 OHM J	1
R846	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
R847	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
R901	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
R905	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
R906	R CARBON FILM	RD-2Z102J-	1/2 1K OHM J	1
R907	R CARBON FILM	RD-2Z102J-	1/2 1K OHM J	1
R908	R CARBON FILM	RD-2Z102J-	1/2 1K OHM J	1
RA02	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
RA04	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
RA06	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
RA10	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
RA11	R CARBON FILM	RD-AZ330J-	1/6 33 OHM J	1
RA12	R CARBON FILM	RD-AZ820J-	1/6 82 OHM J	1
RA13	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
RA14	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
RA17	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
RA18	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
RE01	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
RE02	R CARBON FILM	RD-AZ473J-	1/6 47K OHM J	1
RE03	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
RE04	R CARBON FILM	RD-AZ391J-	1/6 390 OHM J	1
RF01	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	0.05
RF702	R CARBON FILM	RD-AZ241J-	1/6 240 OHM J	1
RF703	R CARBON FILM	RD-AZ391J-	1/6 390 OHM J	1
RF704	R CARBON FILM	RD-AZ681J-	1/6 680 OHM J	1

## ELECTRICAL PARTS LIST

LOC	PART CODE	PART NAME	DESCRIPTION	QTY
RP01	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
RP02	R CARBON FILM	RD-AZ102J-	1/6 1K OHM J	1
RP03	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
RP04	R CARBON FILM	RD-AZ101J-	1/6 100 OHM J	1
RP05	R CARBON FILM	RD-AZ103J-	1/6 10K OHM J	1
RP06	R CARBON FILM	RD-AZ221J-	1/6 220 OHM J	1
RP08	R CARBON FILM	RD-AZ221J-	1/6 220 OHM J	1

# 5-1. CRT INCH DIFFERENT PARTS of CM-908S

ASSY		LOC	Part Name	14"		20"		21"		21"F		REMARK
				(BOM : CPT)		(BOM : OHPT)		(BOM : CPT)		(BOM : LGPD)		
				Part Code	Part Description	Part Code	Part Description	Part Code	Part Description	Part Code	Part Description	
-		ZZ131	CRT GROUND NET	48519A4710	1401S-1015-1P	48519A5110	2001S-1015-1P	48519A5310	2101S-1015-1P	48519A7110	2101F-1015-1P	
		ZZ132	COIL D/G	58G0000084	DC-1450	58G0000146	DC-20SF	58G0000147	DC-21SF	58G0000154	DC-21F1	
CABINET		V901	CRT AS / CRT	PT RTPWH394	NTSC 14" ITC CRT AS	PT RTPWJ993	DTQ-20V3K	4859640860	A51AEZ90X27 P38	4859634760	A51QDJ279X32 P38	CRT & CRT Ass'y
		ZZ210	SPEAKER AS	CABINET Different		CABINET Different		CABINET Different		CABINET Different		
CRT Assy		V01	COIL DY	58D0000082	ODY-M1489	58D0000083	ODY-M2050	***** DELETE *****		***** DELETE *****		
		V05	PCM	4850PM001-	NY-225 (MINI NECK)	4850PM001-	NY-225 (MINI NECK)	***** DELETE *****		***** DELETE *****		
		V901	CRT BARE	48A96314C2	A34AGT13X	48A96820N1	A48JLL40X (P)	***** DELETE *****		***** DELETE *****		
SPEAKER Assy		P601A	CONNECTOR	CABINET Different		CABINET Different		CABINET Different		CABINET Different		
		SP01	SPEAKER	4858310910	SP-5090F03	4858310910	SP-5090F03	4858311110	12W 8 OHM SP-58126F	4858311110	12W 8 OHM SP-58126F	- 14" & 20" : Over 5W + 5W - 21" & 21"F : Over 7W + 7W
		SP02	SPEAKER	4858310910	SP-5090F03	4858310910	SP-5090F03	4858311110	12W 8 OHM SP-58126F	4858311110	12W 8 OHM SP-58126F	
MAIN	MS	C403	C MYLAR	CMYH3C822J	1.6KV BUP 8200PF J	CMYH3C752J	1.6KV BUP 7500PF J	CMYH3C722J	1.6KV BUP 7200PF J	CMYH3C662J	1.6KV BUP 6600PF J	Retrace Capacitor
		C407	C MYLAR	CMYE2D304J	200V PU 0.30MF J	CMYE2D364J	200V PU 0.27MF J	CMYE2D394J	200V PU 0.27MF J	CMYE2D274J	200V PU 0.27MF J	S-Capacitor
		I301	HEAT SINK Assy	PT2S2W7100	1LA78040-- + 7174300811	PT2S2W7100	1LA78040-- + 7174300811	PTD2S2W7100	1LA78041-- + 7174300811	PTD2S2W7100	1LA78041-- + 7174300811	Vertical IC (LA78040 & LA78041)
		I601	HEAT SINK Assy	PTB2S2W8216	1TDA8944J- + 7174301011	PTB2S2W8216	1TDA8944J- + 7174301011	PTA2S2W8217	1TDA8946J- + 7174301011	PTA2S2W8217	1TDA8946J- + 7174301011	Sound Amp. (TDA8944+28216 & TDA8946+28217)
		I801	HEAT SINK Assy	PTP2S2W4600	1STRW6754- + 7174300811	PTP2S2W4600	1STRW6754- + 7174300811	PTB2S2W6120	1STRW6754- + 7174300811	PTB2S2W6120	1STRW6754- + 7174300811	Power IC (H/S 24600 & H/S 26120)
		L401	COIL H-LINEAR	***** DELETE *****		***** DELETE *****		58H0000020	L-76(76.5UH)	58H0000055	TRL-361A	H-Linearity Coil
		P401	CONN WAFER	4859240120	YFW500-06	4859240120	YFW500-06	4859240120	YFW500-06	***** DELETE *****		Wafer for DY Connector
		P901	CONNECTOR	4850708N11	BIC-08T-25T+C-20T+ULW=300	4850708N08	BIC-08T-25T+C-20T+ULW=400	4850708N08	BIC-08T-25T+C-20T+ULW=400	4850708N08	BIC-08T-25T+C-20T+ULW=400	Connector for CRT & Main connection
		Q402	HEAT SINK Assy	PTB2S2W7201	TST1803DFH + 7174301011	PTB2S2W7201	TST1803DFH + 7174301011	PTJ2S2W7200	TST1803DH- + 7174301011	PTJ2S2W7200	TST1803DH- + 7174301011	HOR.-TR (ST1803DFH+27201 & ST1803DHI+27200)
		R801	POSISTOR	DEC140M290	ECPC140M290	DDC7R0M290	ECPCD7R0M290	DDC7R0M290	ECPCD7R0M290	DDC7R0M290	ECPCD7R0M290	PTC posistor (14":14 OHM, 20",21",21"F:7 OHM)
	SCT01	SOCKET CRT	***** DELETE *****		***** DELETE *****		4859304130	ISHG93S	4859304130	ISHG93S	CRT Socket for 21",21"F : Mark-II	
	SCT02	SOCKET CRT	4859303930	ISM03S INCHANG	4859303930	ISM03S INCHANG	***** DELETE *****		***** DELETE *****		CRT Socket for 14",20" : Mini.	
	JB	N401	TERM PIN	***** DELETE *****		***** DELETE *****		***** DELETE *****		4857417500	DA-IB0214(D2.3/DY PIN)	Wafer for DY Connector
		N402	TERM PIN	***** DELETE *****		***** DELETE *****		***** DELETE *****		4857417500	DA-IB0214(D2.3/DY PIN)	Wafer for DY Connector
		N403	TERM PIN	***** DELETE *****		***** DELETE *****		***** DELETE *****		4857417500	DA-IB0214(D2.3/DY PIN)	Wafer for DY Connector
		N404	TERM PIN	***** DELETE *****		***** DELETE *****		***** DELETE *****		4857417500	DA-IB0214(D2.3/DY PIN)	Wafer for DY Connector
		R405	R M-OXIDE FILM	***** DELETE *****		***** DELETE *****		RS02Z102JS	2W 1K OHM J SMALL	RS02Z102JS	2W 1K OHM J SMALL	Ringin Resistor (Parallel with H-Linearity)
		R411	R M-OXIDE FILM	RS02Z249JS	2W 2.4 OHM J SMALL	RS02Z339JS	2W 3.3 OHM J SMALL	RS02Z129JS	2W 1.2 OHM J SMALL	RS02Z339JS	2W 3.3 OHM J SMALL	Heater Resistor
		R805	R M-OXIDE FILM	RS02Z338JS	2W 0.33 OHM J SMALL	RS02Z278JS	2W 0.27 OHM J SMALL	RS02Z228JS	2W 0.22 OHM J SMALL	RS02Z228JS	2W 0.22 OHM J SMALL	OCP Resistor
	JR	C405	C CERA	***** DELETE *****		***** DELETE *****		CCXB2H561K	500V B 560PF K (TAPPING)	CCXB2H561K	500V B 560PF K (TAPPING)	Ringin Capacitor (Parallel with H-Linearity)
	JA	J123	WIRE COPPER	***** DELETE *****		***** DELETE *****		85801065GY	AWG22 1/0.65 TIN COATING	85801065GY	AWG22 1/0.65 TIN COATING	123V Main B+ (14" & 20")
		J133	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	85801065GY	AWG22 1/0.65 TIN COATING	***** DELETE *****		***** DELETE *****		133V Main B+ (21" & 21"F)
		J401	WIRE COPPER	85801065GY	AWG22 1/0.65 TIN COATING	85801065GY	AWG22 1/0.65 TIN COATING	***** DELETE *****		***** DELETE *****		Deleting H-Linearity Coil
		R609	R CARBON FILM	RD-AZ223J-	1/6 22K OHM J	RD-AZ223J-	1/6 22K OHM J	RD-AZ183J-	1/6 18K OHM J	RD-AZ183J-	1/6 18K OHM J	Different Sound Output Power
		R610	R CARBON FILM	RD-AZ223J-	1/6 22K OHM J	RD-AZ223J-	1/6 22K OHM J	RD-AZ183J-	1/6 18K OHM J	RD-AZ183J-	1/6 18K OHM J	Different Sound Output Power
		R812	R METAL FILM	RN-4Z1502F	1/4 15K OHM F	RN-4Z1502F	1/4 15K OHM F	RN-4Z6801F	1/4 6.8K OHM F	RN-4Z6801F	1/4 6.8K OHM F	Main B+ Feedback (123V or 133V)

## 5-2. FUNCTION DIFFERENT PARTS of CM-908S

### 1. PIP Different Parts

FUNCTIONS				With PIP		Without PIP		REMARK
Applied Models				DTR - XXXX ME/MEF DTR - XXXX MP/MPF		DTR - XXXX MT/MTF DTR - XXXX MZ/MZF		- ME/MEF : PIP, TXT - MP/MPF : PIP only - MT/MTF : TXT only - MZ/MZF : Not Support PIP & TXT
ASSY		LOC	Part Name	Part Code	Part Description	Part Code	Part Description	
MAIN	MS	D813	DIODE	DRGP30J---	RGP30J	***** DELETE *****		
		XP01	CRYSTAL QUARTZ	5XE20R250E	HC-49/U 20.2500MHZ 30PPM	***** DELETE *****		
	J2	IP01	IC CHIP PIP	1SDA9488XE	SDA9488X	***** DELETE *****		
	J0	C827	C ELECTRO	CEXF1C471V	16V RSS 470MF (8X12)	***** DELETE *****		
	JB	R839	R M-OXIDE FILM	RS02Z240JS	2W 24 OHM J SMALL	***** DELETE *****		
		R840	R M-OXIDE FILM	RS02Z240JS	2W 24 OHM J SMALL	***** DELETE *****		
	JR	CP06	C ELECTRO	CEXF1H470V	50V RSS 47MF (6.3X11)	***** DELETE *****		
		CP08	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11)	***** DELETE *****		
		CP11	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11)	***** DELETE *****		
		CP13	C ELECTRO	CEXF1H100V	50V RSS 10MF (5X11)	***** DELETE *****		
		CP17	C ELECTRO	CEXF1H229V	50V RSS 2.2MF (5X11)	***** DELETE *****		
		CP21	C ELECTRO	CEXF1H229V	50V RSS 2.2MF (5X11)	***** DELETE *****		
		Q809	TR	TKTC3205Y-	KTC3205Y	***** DELETE *****		
		Q810	TR	TKTC3198Y-	KTC3198Y	***** DELETE *****		
		Q813	TR	TKTA1270Y-	KTA1270Y	***** DELETE *****		
		Q814	TR	TKTC3198Y-	KTC3198Y	***** DELETE *****		
	R829	R METAL FILM	RN02B569JS	2W 5.6 OHM J SMALL	***** DELETE *****			
	JA	LP01	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	***** DELETE *****		
		LP02	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	***** DELETE *****		
		LP03	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	***** DELETE *****		
		LP04	COIL PEAKING	5CPZ100K02	10UH K (AXIAL 3.5MM)	***** DELETE *****		
D812		DIODE	***** DELETE *****			DRGP15J---	RG15J	
EEPROM		PIP ON		ON		OFF		

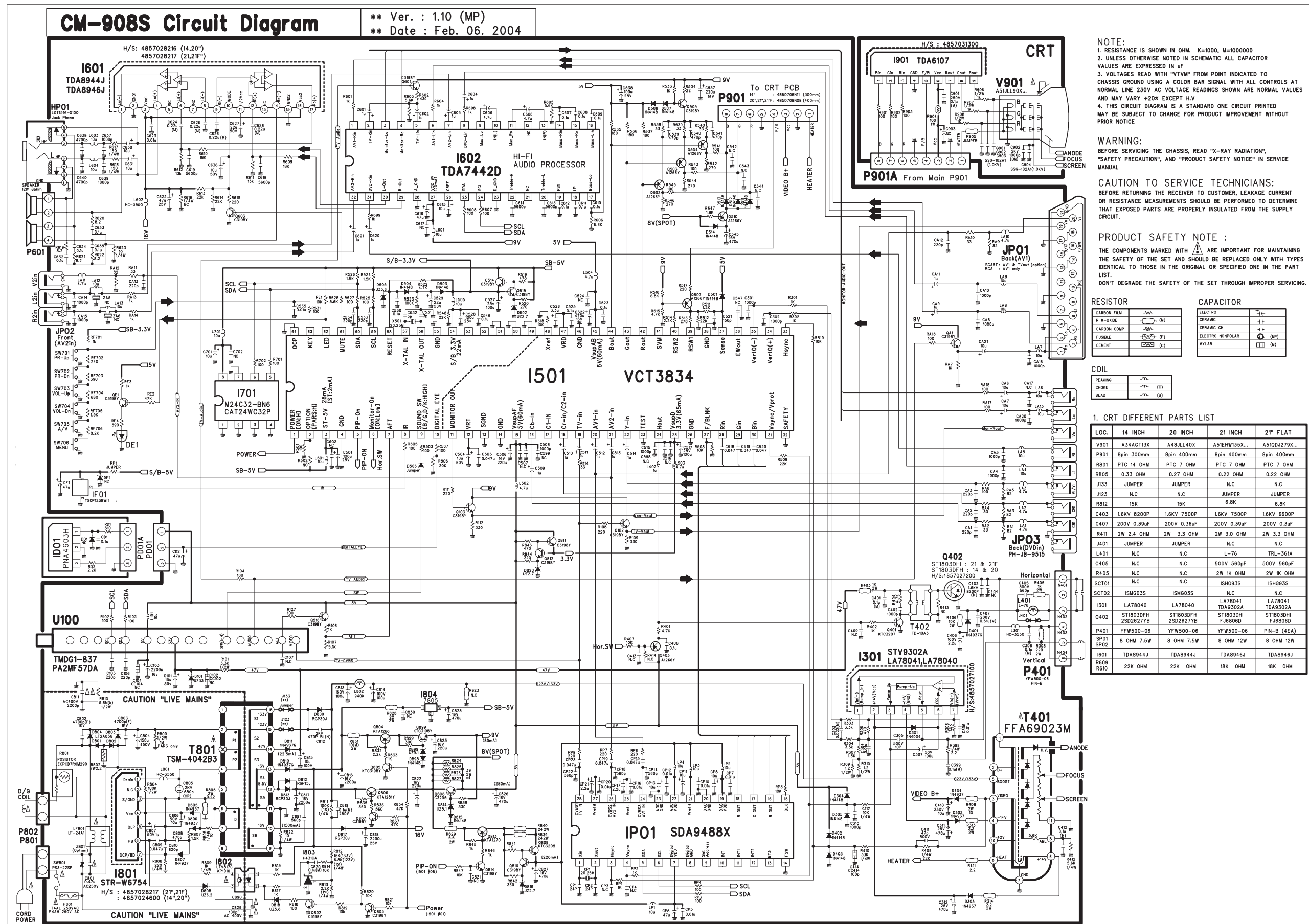
- BOM do not contain EEPROM DATA status
- It only can be changed by svc remote-controller (s11 button)

### 2. DIGITAL EYE Different Parts

FUNCTIONS				With D/EYE		Without D/EYE		REMARK
Applied Models				All Models except DTR-xxD3, xxD4		DTR - xxD3 ME/MP/MT/MZ DTR - xxD4 ME/MP/MT/MZ		- D/EYE Depend on Cabinet
ASSY		LOC	Part Name	Part Code	Part Description	Part Code	Part Description	
MAIN	MS	ID01	IC PHOTO SENSOR	1PNA4603H-	PNA4603H	***** DELETE *****		
		PD01A	CONNECTOR	4850703S18	YH025-03+YBNH250+ULW=200	***** DELETE *****		
EEPROM		DIGI EYE		ON		OFF		

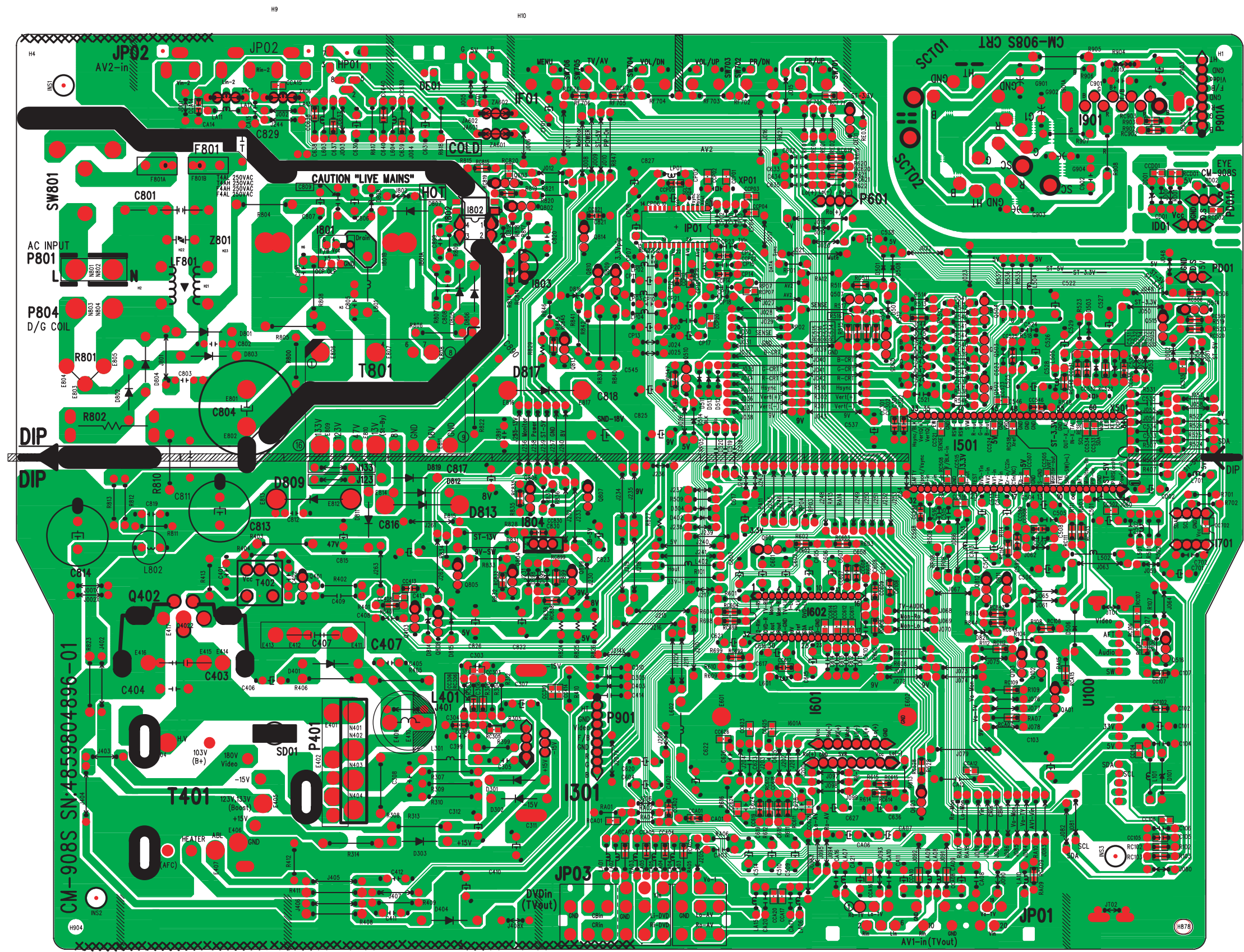
- BOM do not contain EEPROM DATA status
- It only can be changed by svc remote-controller (s11 button)

## 6. Schmetic Diagram





7. Printed Circuit Board



8. Mechanical Exploded View

8-1 14D9

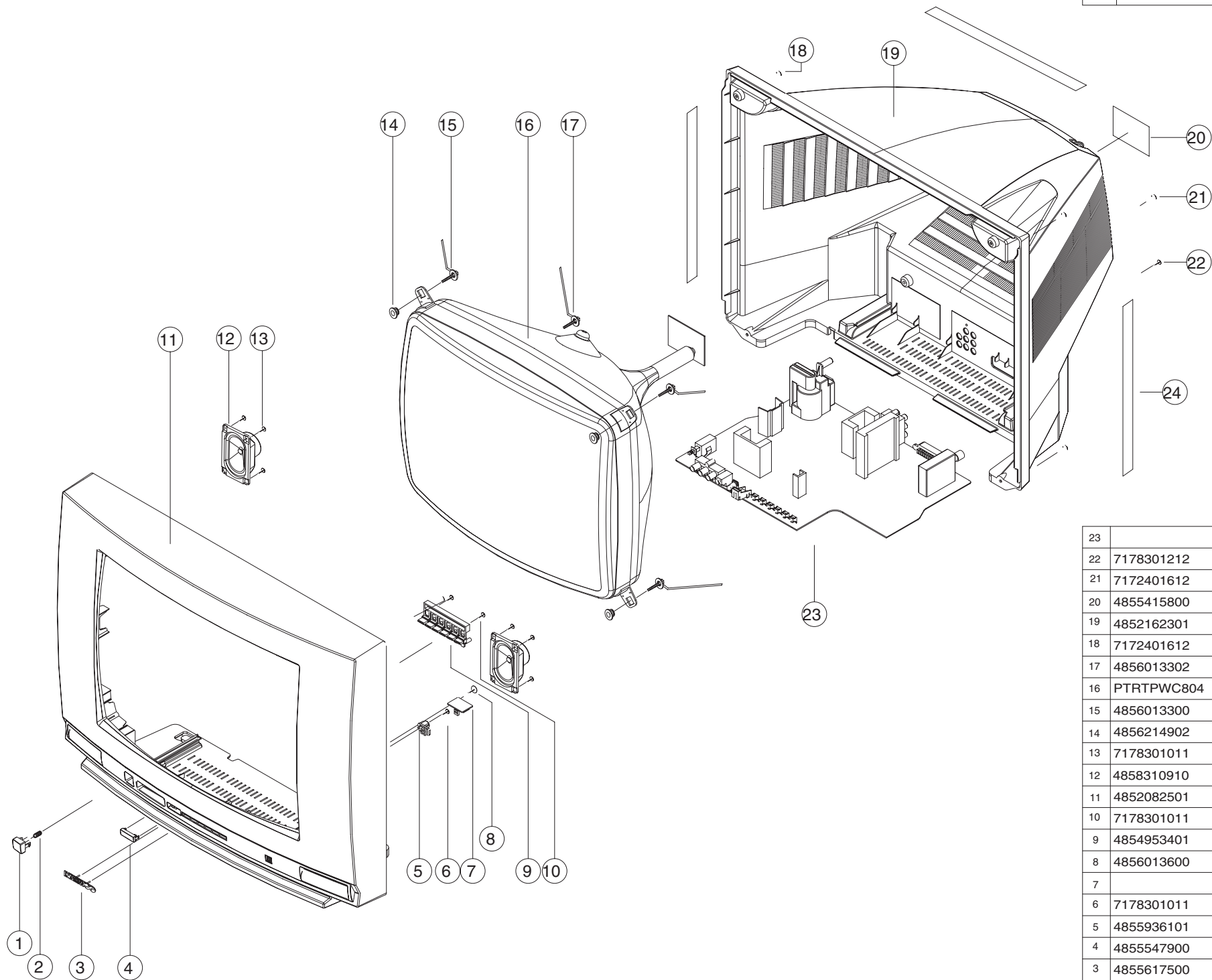
The exploded view diagram illustrates the assembly of a television. Key components shown include the main PCB (15), CRT assembly (17), bezel (20), and various mounting hardware. Callout numbers 1 through 25 identify specific parts and their assembly points.

25	4855415800	SPEC PLATE	1	150ART P/E FILM	
24	4857817611	CLOTH BLACK	1	FELT 200X20X0.7	
23	7172401412	SCREW TAPPTITE	5	TT2 TRS 4X14 MFZN BK	
22	7178301212	SCREW TAPPTITE	1	TT2 WAS 3X12 MFZN BK	
21	4857817640	CLOTH BLACK	2	FELT 100X20X0.7	
20	4852162101	COVER BACK	1	HIPS BK	
19	4856013351	SCREW CRT FIXING	2	30X140 YL	
18	4856013350	SCREW CRT FIXING	2	30X80 BK	
17	48519A4710	CRT AS (14")	1	1401S-1015-1P	
16	4856215402	WASHER RUBBER	4	CR T2.0	
15		MAIN PCB	1	CM-907S	
14	4853747800	RETA PCB	2	NYLON 66	
13	7178301011	SCREW TAPPTITE	2	A34KQV42X	5+12
12	4854953401	BUTTON CH	1	ABS GY	
11	7178301011	SCREW TAPPTITE	8	TT2 WAS 3X10 MFZN	
10	4858310910	SPEAKER	2	SP-5090F03	
9	4856013600	SCREW SPKR FIX	1	SWRM+SECC	5+8
8		DIGITAL EYE PCB	1		
7	7178301011	SCREW TAPPTITE	1	TT2 WAS 3X10 MFZN	5+6
6	4855936101	DECO EYE	1	ABS BLUE	
5	4852082201	MASK FRONT	1	HIPS GY	
4	48556171SD	MARK BRAND	1	SILVER DIA-CUTTING	
3	4855547900	DECO SENSOR	1	PC SMOG	
2	4856715600	SPRING	1	SWPA PIE 0.4	
1	4854863101	BUTTON POWER	1	ABS GY	
No	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
UNITS	m/m	Designed by	Checked by	Inspected by	Approved by
SCALE	N/S	K.G.S			
		02/02/18			
Daewoo Electronics CO.,LTD.		MODEL	DTD-14D 9MZ	D	485009 KC
Team 4, TV Research Center		REFERENCE	CM-90 7S	N	



Mechanical Exploded View

8-2 20D9



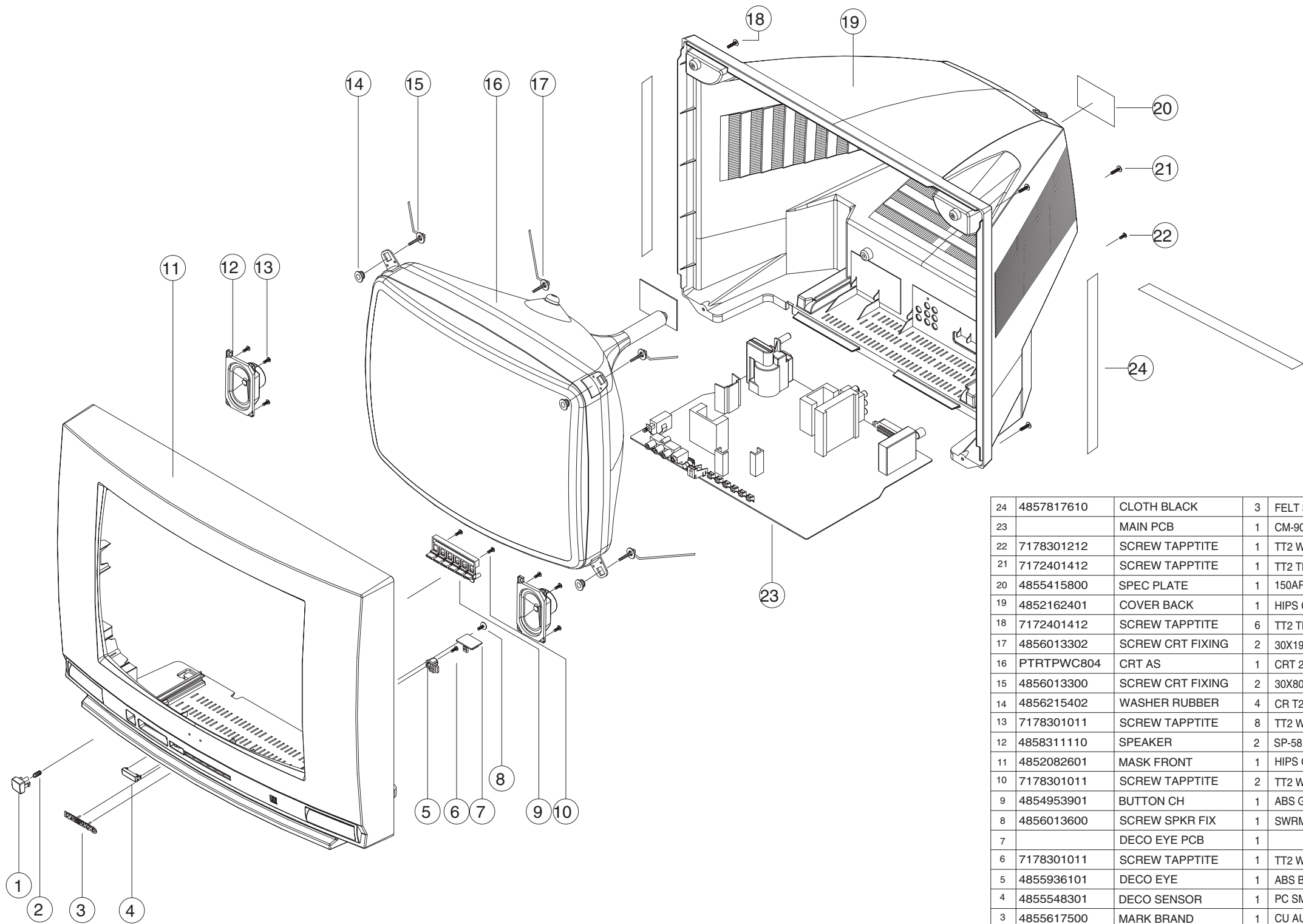
REV	LIST OF MODIFICATION	REASON OF MODIFICATION	DATE	NAME	APPR
1					
2					

23		MAIN PCB	1	CM-907S	
22	7178301212	SCREW TAPPTITE	1	TT2 WAS 3X12 MFZN BK	23+19
21	7172401612	SCREW TAPPTITE	1	TT2 TRS 4X16 MFZN BK	23+19
20	4855415800	SPEC PLATE	1	150ART P/E FILM	
19	4852162301	COVER BACK	1	HIPS BK	
18	7172401612	SCREW TAPPTITE	4	TT2 TRS 4X16 MFZN BK	19+11
17	4856013302	SCREW CRT FIXING	2	30X190 BK	16+11
16	PTRTPWC804	CRT AS	1	CRT 20"	
15	4856013300	SCREW CRT FIXING	2	30X80 BK	16+11
14	4856214902	WASHER RUBBER	4	CR T0.2	
13	7178301011	SCREW TAPPTITE	8	TT2 WAS 3X10 MFZN	12+11
12	4858310910	SPEAKER	2	SP-5090F03	
11	4852082501	MASK FRONT	1	HIPS GY	
10	7178301011	SCREW TAPPTITE	2	TT2 WAS 3X10 MFZN	9+11
9	4854953401	BUTTON CH	1	ABS GY	
8	4856013600	SCREW SPKR FIX	1	SWRM+SECC	7+11
7		DECO EYE PCB	1		
6	7178301011	SCREW TAPPTITE	1	TT2 WAS 3X10 MFZN	5+11
5	4855936101	DECO EYE	1	ABS BLUE	
4	4855547900	DECO SENSOR	1	PC SMOG	
3	4855617500	MARK BRAND	1	CU AU+ABS BK	
2	4856716000	SPRING	1	SWPA 0.4	
1	4854863101	BUTTON POWER	1	ABS GY	
No	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
UNITS	-	Designed by GJ YANG	Checked by	Inspected by	Approved by
SCALE	N.S				
DAEWOO Electronics CO.,LTD. Mechanical Design Team, TV Research Center					MODEL REFERENCE
					DTD-20D9 CM-90 7S
					D/N 485009KE
					PART NAME DEVELOPMENT DWG



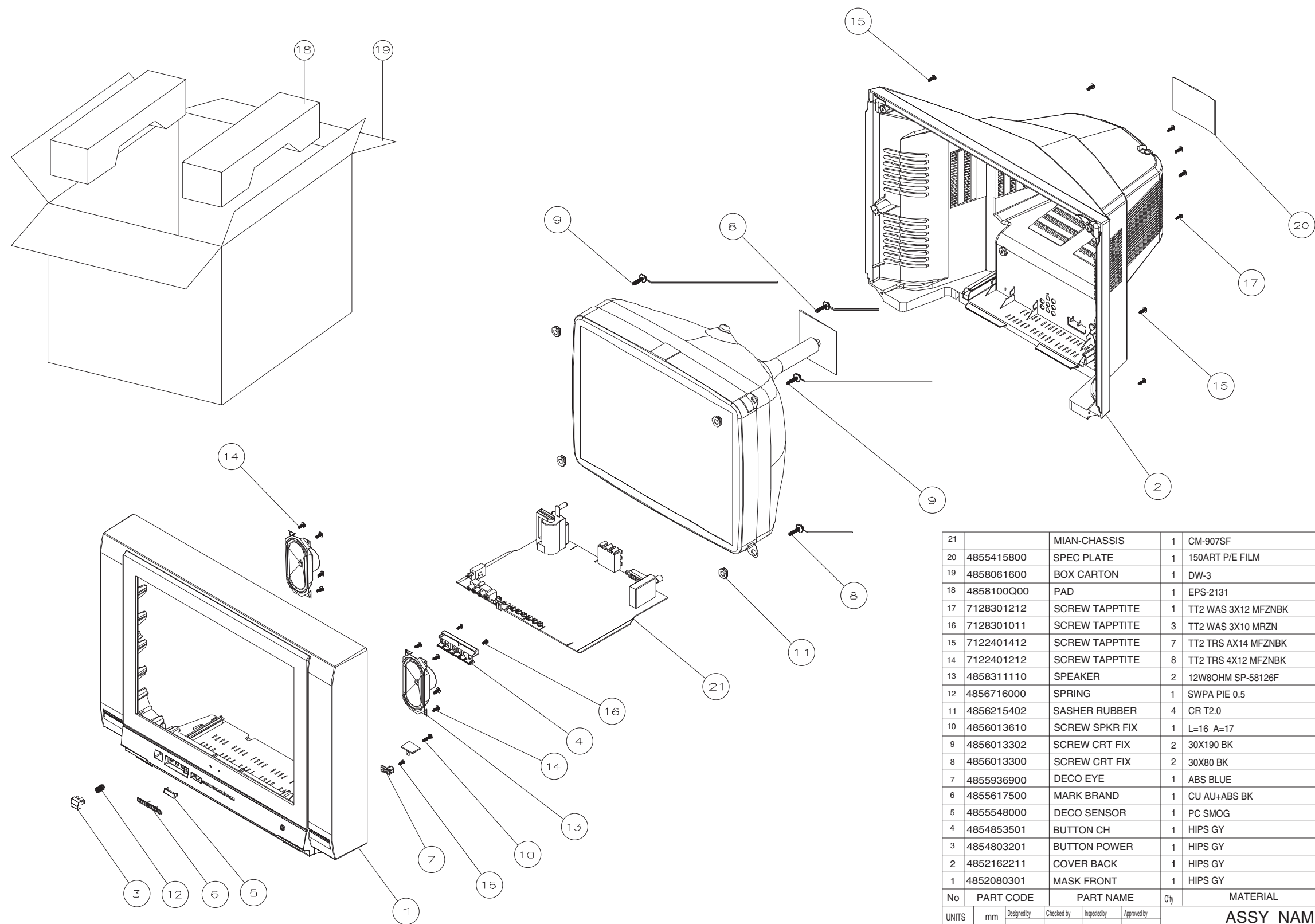
Mechanical Exploded View

8-3 21D9



24	4857817610	CLOTH BLACK	3	FELT 300X20X0.7	
23		MAIN PCB	1	CM-907S	
22	7178301212	SCREW TAPPTITE	1	TT2 WAS 3X12 MFZN BK	23+19
21	7172401412	SCREW TAPPTITE	1	TT2 TRS 4X14 MFZN BK	23+19
20	4855415800	SPEC PLATE	1	150ART P/E FILM	
19	4852162401	COVER BACK	1	HIPS GY	
18	7172401412	SCREW TAPPTITE	6	TT2 TRS 4X14 MFZN BK	19+11
17	4856013302	SCREW CRT FIXING	2	30X190 BK	16+11
16	PTRTPWC804	CRT AS	1	CRT 21"	
15	4856013300	SCREW CRT FIXING	2	30X80 BK	16+11
14	4856215402	WASHER RUBBER	4	CR T2	
13	7178301011	SCREW TAPPTITE	8	TT2 WAS 3X10 MFZN	12+11
12	4858311110	SPEAKER	2	SP-58126F	
11	4852082601	MASK FRONT	1	HIPS GY	
10	7178301011	SCREW TAPPTITE	2	TT2 WAS 3X10 MFZN	9+11
9	4854953901	BUTTON CH	1	ABS GY	
8	4856013600	SCREW SPKR FIX	1	SWRM+SECC	7+11
7		DECO EYE PCB	1		
6	7178301011	SCREW TAPPTITE	1	TT2 WAS 3X10 MFZN	5+11
5	4855936101	DECO EYE	1	ABS BLUE	
4	4855548301	DECO SENSOR	1	PC SMOG	
3	4855617500	MARK BRAND	1	CU AU+ABS BK	
2	4856716000	SPRING	1	SWPA 0.4	
1	4854863501	BUTTON POWER	1	ABS GY	
No	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
UNITS	-	Designed by	Checked by	Inspected by	Approved by
SCALE	N.S		y.k.park		
DAEWOO Electronics Corp.		MODEL	DTD-21D9	D	485009LA
Mechanical Design Team, TV Research Center		REFERENCE	CM-907S	N	

8-4 2131



21		MIAN-CHASSIS	1	CM-907SF	
20	4855415800	SPEC PLATE	1	150ART P/E FILM	
19	4858061600	BOX CARTON	1	DW-3	
18	4858100Q00	PAD	1	EPS-2131	
17	7128301212	SCREW TAPPTITE	1	TT2 WAS 3X12 MFZNBK	
16	7128301011	SCREW TAPPTITE	3	TT2 WAS 3X10 MRZN	
15	7122401412	SCREW TAPPTITE	7	TT2 TRS AX14 MFZNBK	
14	7122401212	SCREW TAPPTITE	8	TT2 TRS 4X12 MFZNBK	
13	4858311110	SPEAKER	2	12W8OHM SP-58126F	
12	4856716000	SPRING	1	SWPA PIE 0.5	
11	4856215402	SASHER RUBBER	4	CR T2.0	
10	4856013610	SCREW SPKR FIX	1	L=16 A=17	
9	4856013302	SCREW CRT FIX	2	30X190 BK	
8	4856013300	SCREW CRT FIX	2	30X80 BK	
7	4855936900	DECO EYE	1	ABS BLUE	21D8
6	4855617500	MARK BRAND	1	CU AU+ABS BK	
5	4855480000	DECO SENSOR	1	PC SMOG	
4	4854853501	BUTTON CH	1	HIPS GY	
3	4854803201	BUTTON POWER	1	HIPS GY	
2	4852162211	COVER BACK	1	HIPS GY	CM-907S CORE
1	4852080301	MASK FRONT	1	HIPS GY	
No	PART CODE	PART NAME	Qty	MATERIAL	REMARKS
UNITS	mm	Designed by	Checked by	Inspected by	Approved by
SCALE	N.S	Y.W.KANG	J.K	KIM	S.D.PARK
DAEWOO Electronics Corp.		MODEL	DTC/DTD-2131	D	485009JY
Mechanical Design Team, TV Research Center		REFERENCE	CM-907S	N	

## 1. Introduction

The VCT 38xxA/B is an IC family of high-quality single-chip TV processors. Modular design and a submicron technology allow the economic integration of features in all classes of TV sets. The VCT 38xxA/B family is based on functional blocks contained and approved in existing products like VDP 3120B, TPU 3050S, and CCZ 3005K.

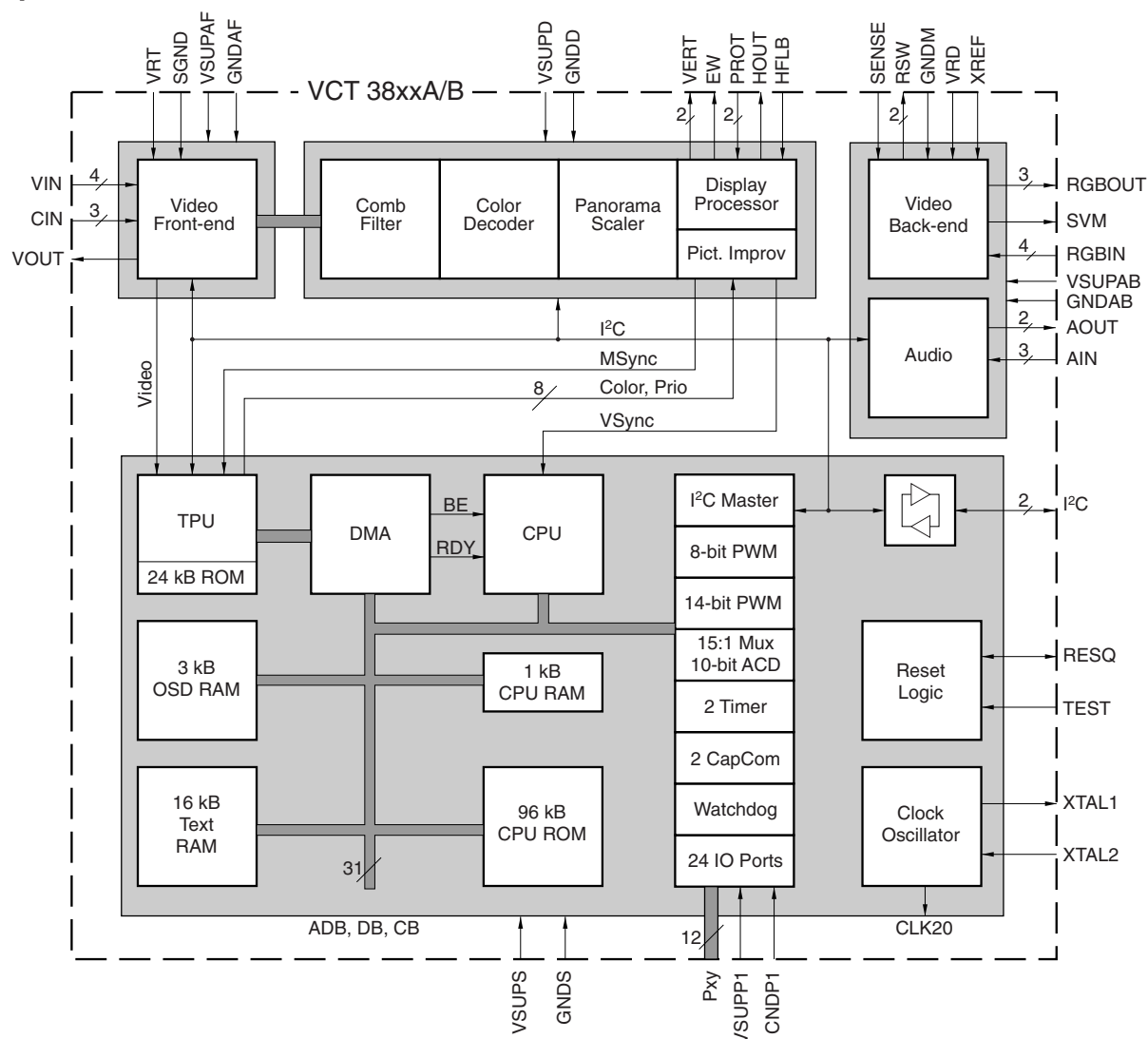
Each member of the family contains the entire video, display, and deflection processing for 4:3 and 16:9 50/ 60-Hz TV sets. The integrated microcontroller is supported by a powerful OSD generator with integrated teletext acquisition which can be upgraded with on-chip page memory. With volume control and audio input select the basic audio features for mono TV sets are integrated. An overview of the VCT 38xxA/B single-chip TV processor family is given in Fig. 1–1 on page 7.

The VCT 38xxA/B family offers a rich feature set, covering the whole range of state-of-the-art 50/60-Hz TV applications.

In comparison to the VCT 38xxA the VCT 38xxB offers the following features:

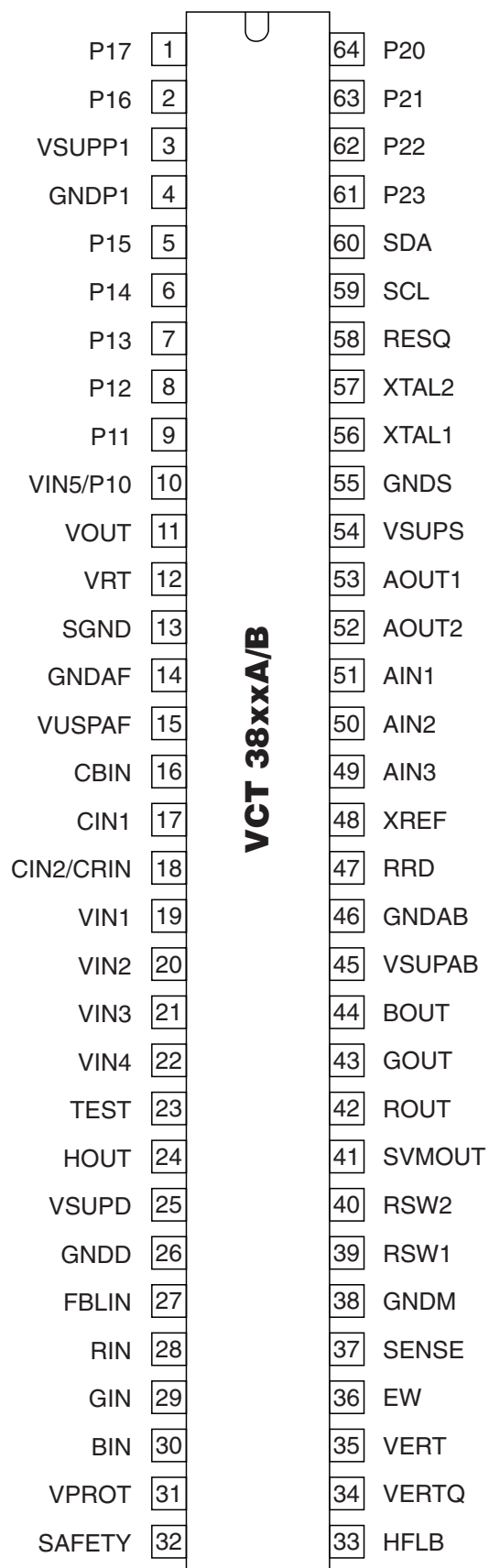
- one additional composite video input
- analog luma/chroma adder for video output
- closed caption module
- additional 12k character ROM

## 2. Chip Architecture



## VCT 38xxA/B

## 3. Pin Configuration



#### 4. Pin Connections and Short descriptions

NC=not connected

LV=if not used, leave vacant

X=obligatory;connect as described in circuit diagram

IN=Input

OUT=Output

SUPPLY=Supply Pin

Pin No. PSDIP 64-pin	Pin Name	Type	Connection (if not used)	Short Description
1	P17	IN/OUT	LV	Port 1, Bit 7
2	P16	IN/OUT	LV	Port 1, Bit 6
3	VSUP <sub>P1</sub>	SUPPLY	X	Supply Voltage, Port 1
4	GND <sub>P1</sub>	SUPPLY	X	Ground, Port 1
5	P15	IN/OUT	LV	Port 1, Bit 5
6	P14	IN/OUT	LV	Port 1, Bit 4
7	P13	IN/OUT	LV	Port 1, Bit 3
8	P12	IN/OUT	LV	Port 1, Bit 2
9	P11	IN/OUT	LV	Port 1, Bit 1
10	P10 / VIN5	IN/OUT	LV	Port 1, Bit 0 Analog Video 5 Input(VCT 38xxB only!)
11	VOUT	OUT	LV	Analog Video Output
12	VRT	IN	X	Reference Voltage Top, Video ADC
13	SGND	IN	GND <sub>AF</sub>	Signal Ground for Analog Input
14	GND <sub>AF</sub>	SUPPLY	X	Ground, Analog Front-end
15	VSUP <sub>AF</sub>	SUPPLY	X	Supply Voltage, Analog Front-end
16	CBIN	IN	VRT	Analog Component Cb Input
17	CIN1	IN	VRT	Analog Chroma 1 Input
18	CIN2/CRIN	IN	VRT	Analog Chroma 2 Input Analog Component Cr Input
19	VIN1	IN	VRT	Analog Video 1 Input
20	VIN2	IN	VRT	Analog Video 2 Input
21	VIN3	IN	VRT	Analog Video 3 Input
22	VIN4	IN	VRT	Analog Video 4 Input
23	TEST	IN	GND	Test Pin, reserved for Test
24	HOUT	OUT	X	Horizontal Drive Output
25	VSUP <sub>D</sub>	SUPPLY	X	Supply Voltage, Digital Circuitry
26	GND <sub>D</sub>	SUPPLY	X	Supply, Digital Circuitry
27	FBLIN	IN	GND <sub>AB</sub>	Fast Blank Input
28	RIN	IN	GND <sub>AB</sub>	Analog Red Input
29	GIN	IN	GND <sub>AB</sub>	Analog Green Input
30	BIN	IN	GND <sub>AB</sub>	Analog Blue Input
31	VPROT	IN	GND <sub>D</sub>	Vertical Protection Input
32	SAFETY	IN	GND <sub>D</sub>	Safety Input
33	HFLB	IN	HOUT	Horizontal Flyback Input
34	VERTQ/ INTLC	OUT	LV	Differential Vertical Sawtooth Output Interlace Control Output

Pin No. PSDIP 64-pin	Pin Name	Type	Connection (if not used)	Short Description
35	VERT	OUT	LV	Differential Vertical Sawtooth Output
36	EW	OUT	LV	Vertical Parabola Output
37	SENSE	IN	GND <sub>AB</sub>	Sense ADC Input
38	GNDM	SUPPLY	X	Ground, MADC Input
39	RSW1	OUT	LV	Range Switch1 for Measurement ADC
40	RSW2	OUT	LV	Range Switch2 for Measurement ADC
41	SVMOUT	OUT	VSUP <sub>AB</sub>	Scan Velocity Modulation Output
42	ROUT	OUT	VSUP <sub>AB</sub>	Analog Red Output
43	GOUT	OUT	VSUP <sub>AB</sub>	Analog Green Output
44	BOUT	OUT	VSUP <sub>AB</sub>	Analog Blue Output
45	VSUP <sub>AB</sub>	SUPPLY	X	Supply Voltage, Analog Back-end
46	GND <sub>AB</sub>	SUPPLY	X	Ground, Analog Back-end
47	VRD	IN	X	DAC Reference
48	XREF	IN	X	Regerence Input for RGB DACs
49	AIN3	IN	GND <sub>s</sub>	Analog Audio 3Input
50	AIN2	IN	GND <sub>s</sub>	Analog Audio 2Input
51	AIN1	IN	GND <sub>s</sub>	Analog Audio 1Input
52	AOUT2	OUT	LV	Analog Audio 2 Output
53	AOUT1	OUT	LV	Analog Audio 1 Output
54	VSUP <sub>s</sub>	SUPPLY	X	Supply Voltage, Standby
55	GND <sub>s</sub>	SUPPLY	X	Ground, Standby
56	XTAL1	IN	X	Analog Crystal Input
57	XTAL2	OUT	X	Analog Crystal Output
58	RESQ	IN/OUT	X	Reset Input/Output, Active Low
59	SCL	IN/OUT	X	I <sup>2</sup> C Bus Clock
60	SDA	IN/OUT	X	I <sup>2</sup> C Bus Data
61	P23	IN/OUT	LV	Port 2, Bit 3
62	P22	IN/OUT	LV	Port 2, Bit 2
63	P21	IN/OUT	LV	Port 2, Bit 1
64	P20	IN/OUT	LV	Port 2, Bit 0



## 5. Pin Descriptions for PSDIP64 package

Pin 1,2,5-10, P17 P10 I/O Port (Fig. 6–27)

These pins provide CPU controlled I/O ports. P10 can be configured as video input VIN5 (Fig. 6–9) on VCT 38xxB only!

Pin 3, VSUPP1\* Supply Voltage, Port 1 Driver This pin is used as supply for the I/O port 1 driver.

Pin 4, GNDP1\* Ground, Port 1 Driver  
This is the ground reference for the I/O port 1 driver.

Pin 11, VOUT Analog Video Output (Fig. 6–12)  
The analog video signal that is selected for the main (luma, CVBS) adc is output at this pin. On VCT 38xxB this pin can also deliver the sum of luma and chroma input signals (S-VHS). An emitter follower is required at this pin.

Pin 12, VRT Reference Voltage Top (Fig. 6–13)  
Via this pin, the reference voltage for the A/D converters is decoupled. The pin is connected with 10 F/47 nF to the Signal Ground Pin.

Pin 13, SGND Signal GND for Analog Input  
This is the high quality ground reference for the video input signals.

Pin 14, GNDAF\* Ground, Analog Front-end  
This pin has to be connected to the analog ground. No supply current for the digital stages should flow through this line.

Pin 15, VSUPAF\* Supply Voltage, Analog Front-end  
This pin has to be connected to the analog supply voltage. No supply current for the digital stages should flow through this line.

Pin 16,18, CBIN,CRIN Analog Chroma Component Input (Fig. 6–11)  
These pins are used as the chroma component (CB,CR) inputs required for the analog YUV Interface. The input signal must be AC-coupled. The CRIN pin can alternatively be used as the second SVHS chroma input (CIN2).

Pin 17,18, CIN1,CIN2 Analog Chroma Input (Fig. 6–10)  
These are the analog chroma inputs. A S-VHS chroma signal is converted using the chroma (Video 2) AD converter. A resistive divider is used to bias the input signal to the middle of the converter input range. The input signal must be AC-coupled. The CIN2 pin can alternatively be used as the chroma component (CR) input required for the analog YUV Interface.

Pins 19,22, VIN1–4 Analog Video Input (Fig. 6–9)  
These are the analog video inputs. A CVBS or S-VHS luma signal is converted using the luma (Video 1) AD converter. The input signal must be AC-coupled.

Pin 23, TEST Test Input (Fig. 6–5)  
This pin enables factory test modes. For normal operation, it must be connected to ground.

Pin 24, HOUT Horizontal Drive Output (Fig. 6–16)  
This open drain output supplies the drive pulse for the horizontal output stage. The polarity and gating with the flyback pulse are selectable by software.

Pin 25, VSUPD\* Supply Voltage, Digital Circuitry

Pin 26, GNDD\* Ground, Digital Circuitry  
This is the ground reference for the digital circuitry.

Pin 27, FBLIN Fast Blank Input (Fig. 6–18)  
These pins are used to switch the RGB outputs to the external analog RGB inputs. The active level (low or high) can be selected by software.

Pin 28,29,30, RIN, GIN, BIN Analog RGB Input (Fig.6–14)

These pins are used to insert an external analog RGB signal, e.g. from a SCART connector which can be switched to the analog RGB outputs with the fast blank signal. The analog back-end provides separate brightness and contrast settings for the external analog RGB signals.

Pin 31, VPROT Vertical Protection Input (Fig. 6–17)  
In the event of a malfunction of the vertical deflection stage, the vertical protection circuitry prevents the picture tube from burnig in. During vertical blanking, a signal level of 2.5 V is sensed. If a negative edge cannot be detected, the RGB output signals are blanked.

Pin 32, SAFETY Safety Input (Fig. 6–17)  
This is a three-level input. Low level means normal function. At the medium level RGB output signals are blanked. At high level RGB output signals are blanked and horizontal drive is shut off.

Pin 33, HFLB Horizontal Flyback Input (Fig. 6–17)  
Via this pin the horizontal flyback pulse is supplied to the VCT 38xxA/B.

Pin 34, VERTQ, INTLC Inverted Vertical Sawtooth Output (Fig. 6–20) / Interlace Output (Fig. 6–19)  
This pin supplies the inverted signal of VERT. Together with the VERT pin it can be used to drive symmetrical deflection amplifiers. The drive signal is generated with 15-bit precision. The analog voltage is generated by a 4 bit current-DAC with external resistor and uses digital noise shaping. Alternatively this pin supplies the interlace information, the polarity is programmable.

**Pin 35, VERT Vertical Sawtooth Output (Fig. 6–20)**

This pin supplies the drive signal for the vertical output stage. The drive signal is generated with 15-bit precision. The analog voltage is generated by a 4 bit current-DAC with external resistor and uses digital noise shaping.

**Pin 36, EW East-West Parabola Output (Fig. 6–21)**

This pin supplies the parabola signal for the East-West correction. The drive signal is generated with 15 bit precision. The analog voltage is generated by a 4 bit current-DAC with external resistor and uses digital noise shaping.

**Pin 37, SENSE Measurement ADC Input (Fig. 6–23)**

This is the input of the analog to digital converter for the picture and tube measurement. Three measurement ranges are selectable with RSW1 and RSW2.

**Pin 38, GNDM Measurement ADC Reference Input**

This is the ground reference for the measurement A/D converter. Connect this pin to GND

**Pin 39, 40, RSW1, RSW2 Range Switch for Measuring ADC (Fig. 6–22)**

These pins are open drain pull-down outputs. RSW1 is switched off during cutoff and whitedrive measurement. RSW2 is switched off during cutoff measurement only.

**Pin 41, SVMOUT Scan Velocity Modulation Output (Fig. 6–15)**

This output delivers the analog SVM signal. The D/A converter is a current sink like the RGB D/A converters. At zero signal the output current is 50% of the maximum output current.

**Pin 42, 43, 44, ROUT, GOUT, BOUT Analog RGB Output (Fig. 6–15)**

These pins are the analog Red/Green/Blue outputs of the back-end. The outputs are current sinks.

**Pin 45, VSUPAB\* Supply Voltage, Analog Back-end**

This pin has to be connected to the analog supply voltage. No supply current for the digital stages should flow through this line.

**Pin 46, GNDAB\* Ground, Analog Back-end**

This pin has to be connected to the analog ground. No supply current for the digital stages should flow through this line.

**Pin 47, VRD DAC Reference Decoupling (Fig. 6–24)**

Via this pin the DAC reference voltage is decoupled by an external capacitor. The DAC output currents depend on this voltage, therefore a pull-down transistor can be used to shut off all beam currents. A decoupling capacitor of 4.7 F in parallel to 100 nF (low inductance) is required.

**Pin 48, XREF DAC Current Reference (Fig. 6–24)**

External reference resistor for DAC output currents, typical 10 k  $\Omega$  to adjust the output current of the D/A converters. (see recommended operating conditions). This resistor has to be connected to analog ground as closely as possible to the pin.

**Pin 49, 50, 51, AIN13 Analog Audio Input (Fig. 6–25)**

The analog input signal from TUNER or SCART is fed to this pin. The input signal must be AC-coupled. Alternatively these pins can be used as digital input port (Fig. 6–25).

**Pin 52, 53, AOUT1, AOUT2 Analog Audio Output (Fig. 6–26)**

These pins are the analog audio outputs. Connections to these pins must use a 680 ohm series resistor as closely as possible to these pins. The output signals are intended to be AC coupled. Alternatively these pins can be used as digital input port (Fig. 6–26).

**Pin 54, VSUPS\* Supply Voltage, Standby****Pin 55, GNDS\* Ground, Standby**

This is the ground reference for the standby circuitry.

**Pins 56 and 57, XTAL1 Crystal Input and XTAL2 Crystal Output (Fig. 6–7)**

These pins are connected to an 20.25 MHz crystal oscillator which is digitally tuned by integrated shunt capacitances. The CLK20 clock signal is derived from this oscillator.

**Pin 58, RESQ Reset Input/Output (Fig. 6–6)**

A low level on this pin resets the VCT 38xxA/B. The internal CPU can pull down this pin to reset external devices connected to this pin.

**Pin 59, SCL I<sup>2</sup>C Bus Clock (Fig. 6–6)**

This pin connects to the I<sup>2</sup>C bus clock line. The signal can be pulled down by external slave ICs to slow down data transfer.

**Pin 60, SDA I<sup>2</sup>C Bus Data (Fig. 6–6)**

This pin connects to the I<sup>2</sup>C bus data line.

**Pin 6164, P20P23 I/O Port (Fig. 6–27)**

These pins provide CPU controlled I/O ports.



## 6. Pin Circuits

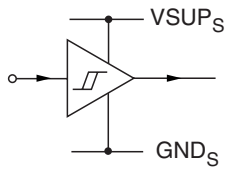


Fig. 6-5 : Input pins TEST, DISINTROM

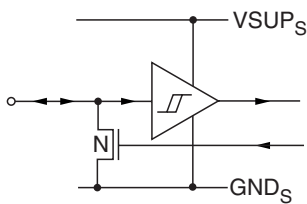


Fig. 6-6 : Input/Output pins RESQ, SDA, SCL

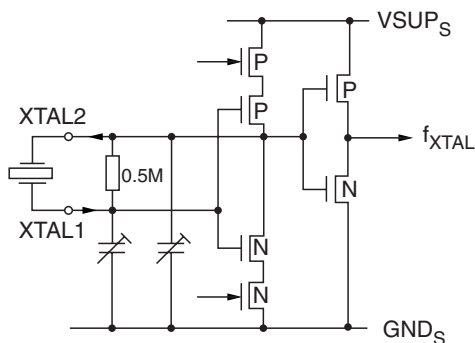


Fig. 6-7 : Input/Output pins XTAL1, XTAL2

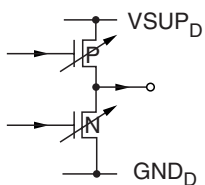


Fig. 6-8 : Output pin CLK20

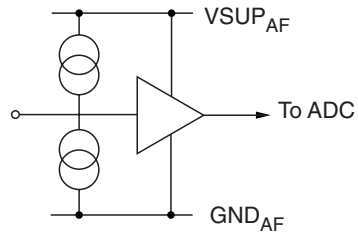


Fig. 6-9 : Input pins VIN1-VIN5

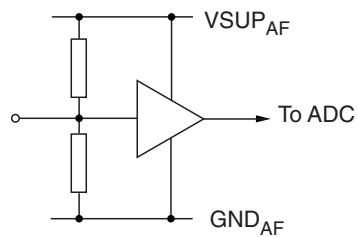


Fig. 6-10 : Input pins CIN1-CIN2

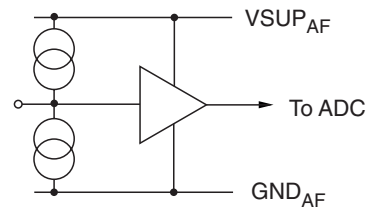


Fig. 6-11 : Input pins CRIN, CBIN

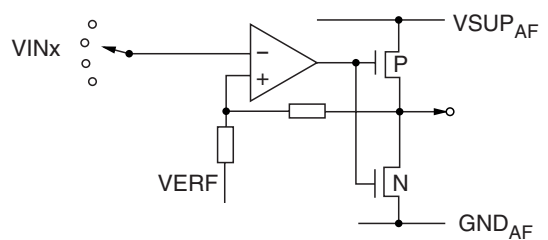


Fig. 6-12 : Output pin VOUT

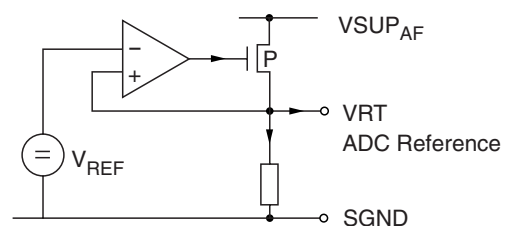


Fig. 6-13 : Supply pins VRT, SGND

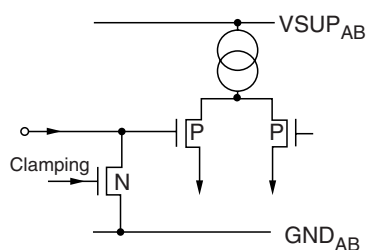


Fig. 6-14 : Input pins RIN, GIN, BIN

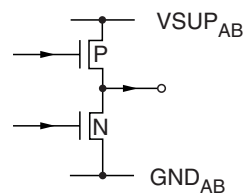


Fig. 6-19 : Output pin INTLC

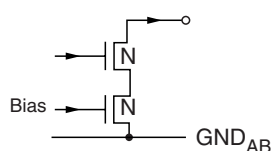


Fig. 6-15 : Output pin ROUT, GOUT, BOUT, SVMOUT

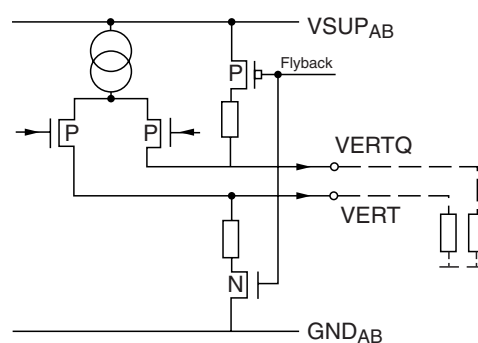


Fig. 6-20 : Output pins VERT, VERTQ

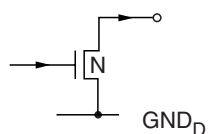


Fig. 6-16 : Output pins HOUT

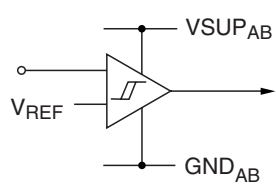


Fig. 6-17 : Input pins SAFETY, VPROT, HGLB

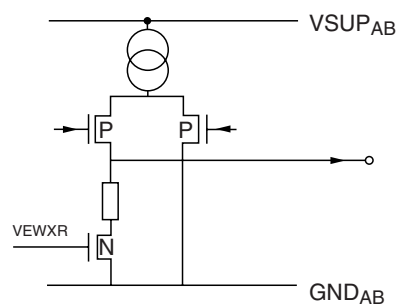


Fig. 6-21 : Output pin EW

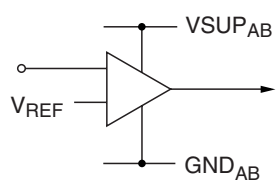


Fig. 6-18 : Input pins FBIN

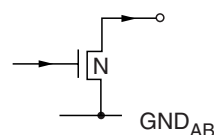


Fig. 6-22 : Output pins RSW1, RSW2

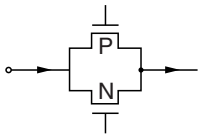


Fig. 6-23 : Input pins SENSE

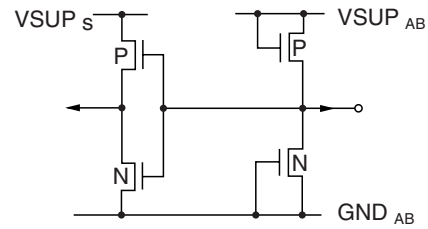


Fig. 6-28 : Input pins P42-P46

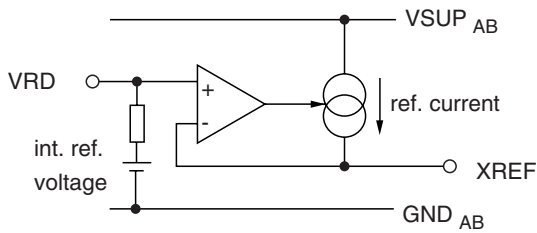


Fig. 6-24 : Supply pins XREF, VRD

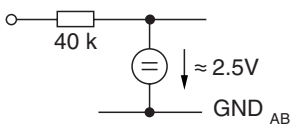


Fig. 6-25 : Input pins AIN1-3

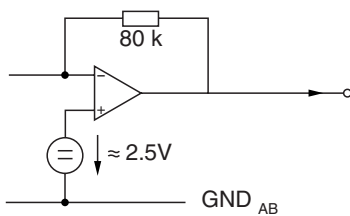


Fig. 6-26 : Output pins AOUT1, AOUT2

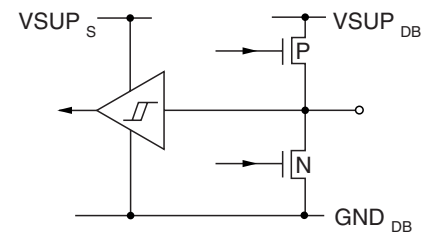


Fig. 6-30 : Input/Output pins DB0-DB7

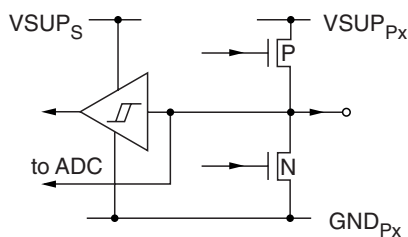


Fig. 6-27 : Input/Output pins P10-P17,  
P20-P27, P30-P37

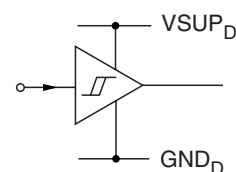
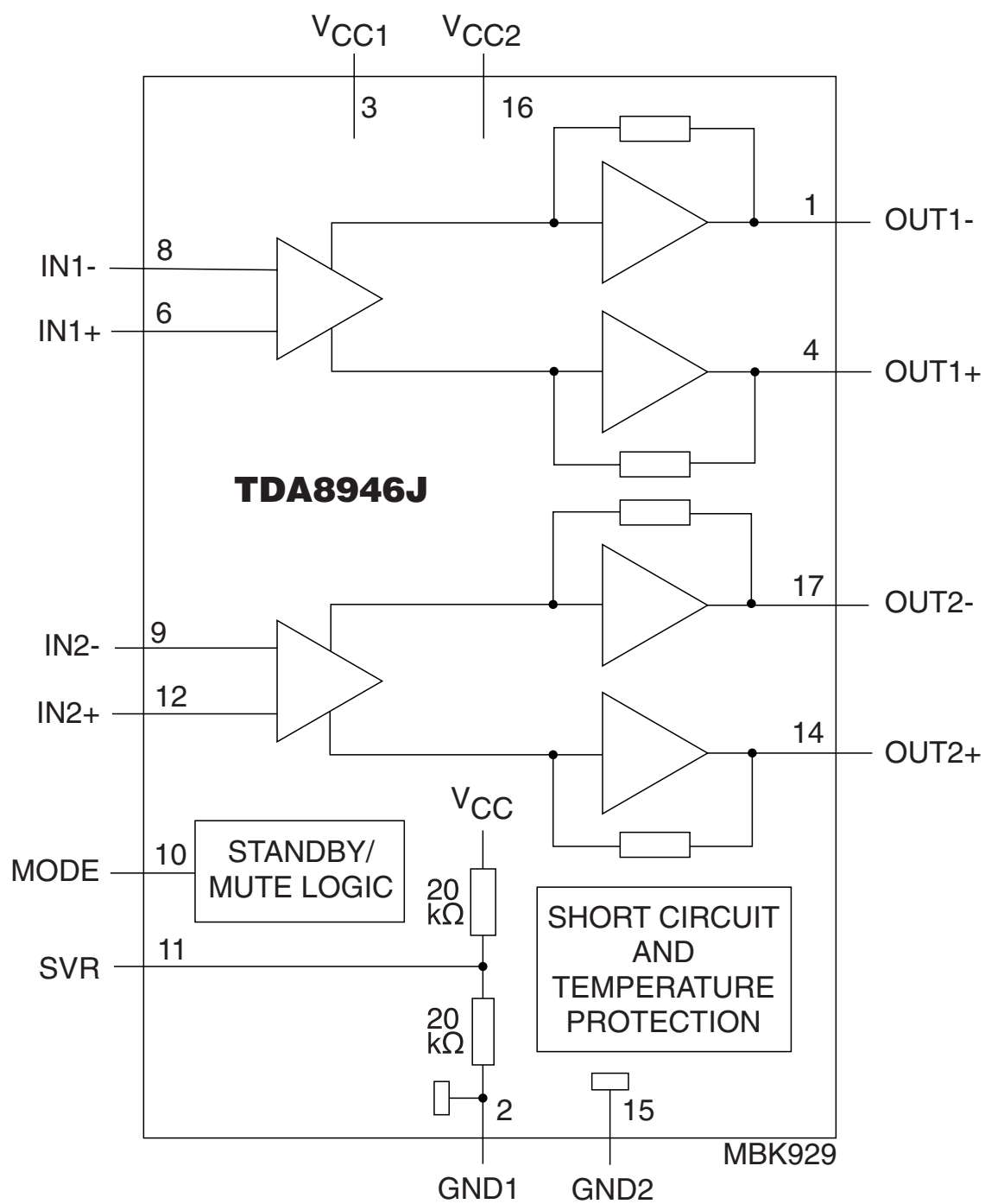


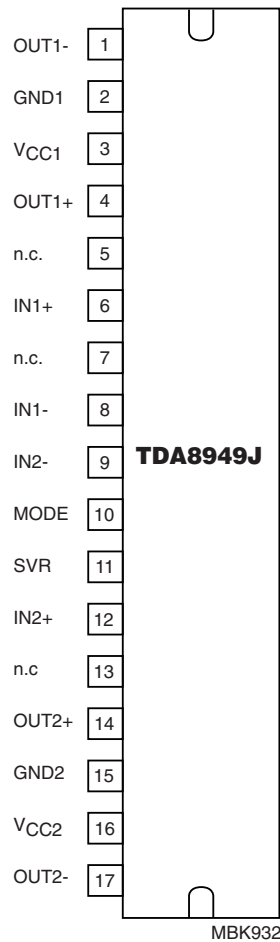
Fig. 6-31 : Input pins VB0-VB7, VBCLK

## 1. Block Diagram



## 2. Block Diagram

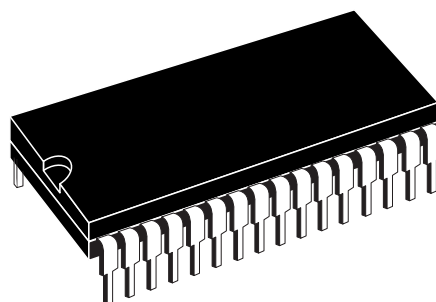
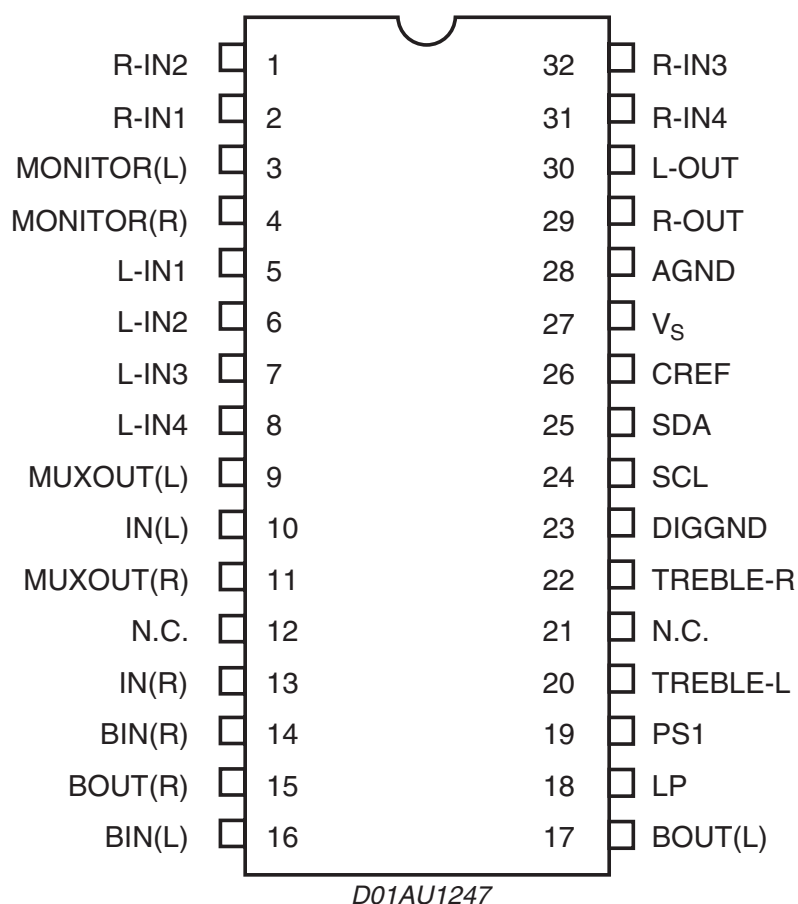
### 2-1 Pinning



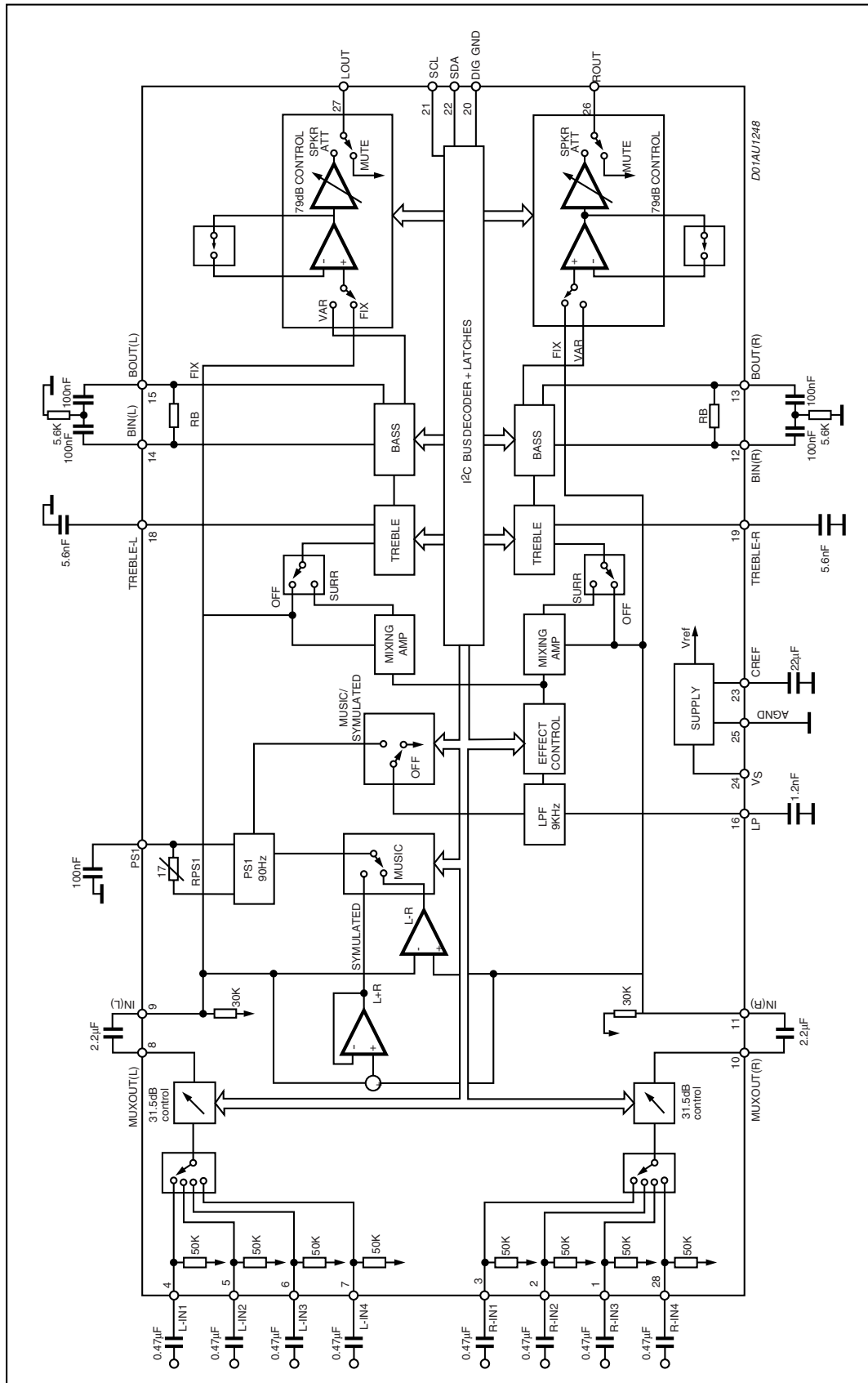
### 2-2 Pin description

Symbol	Pin	Description
OUT1-	1	negative loudspeaker terminal 1
GND1	2	ground channel 1
Vcc1	3	supply voltage channel 1
OUT1+	4	positive loudspeaker terminal 1
n.c	5	not connected
IN1+	6	positive input 1
n.c	7	not connected
IN1-	8	negative input 1
IN2-	9	negative input 2
MODE	10	mode selection input (standby, mute, operating)
SVR	11	half supply voltage decoupling (ripple rejection)
IN2+	12	positive input 2
n.c	13	not connected
OUT2+	14	positive loudspeaker terminal 2
GND2	15	ground channel 2
Vcc2	16	supply voltage channel 2
OUT2-	17	negative loudspeaker terminal 2

4STEREOINPUTS  
 INPUTATTENUATIONCONTROLIN0.5dB STEP  
 TREBLEANDBASSCONTROL  
 TWOSURROUNDMODEAVAILABLEWITH  
 4SELECTABLERESPONSES:  
 - MUSIC  
 - SIMULATEDSTEREO  
 TWOSPEAKERATTENUATORS:  
 - 2INDEPENDENTSPEAKERCONTROLS  
 IN1dBSTEPSFORBALANCEFACILITY  
 - INDEPENDENTMUTEFUNCTION  
 ALLFUNCTIONSPROGRAMMABLEVIASE-RIALBUS  
 2MONITOROUTPUT(ONLYFORTDA7442)

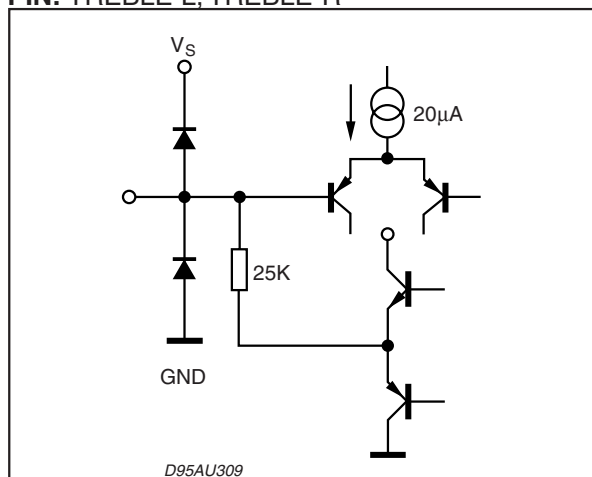
**SDIP32****SDIP32**

BLOCK DIAGRAM(TDA7442D)

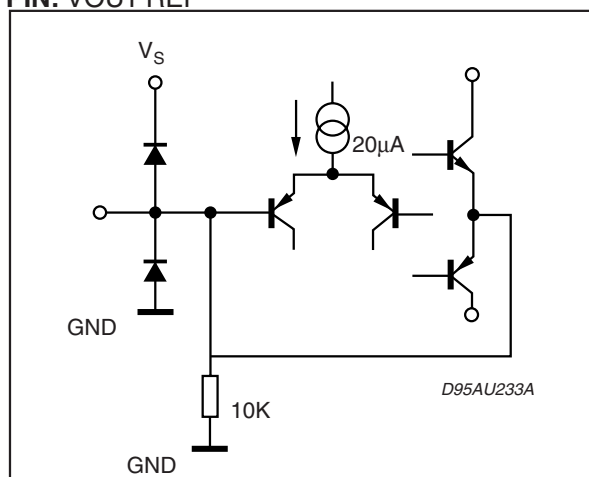
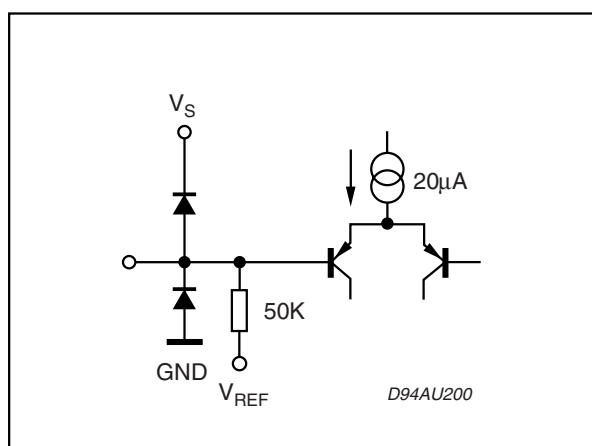


## TDA7442 - TDA7442D

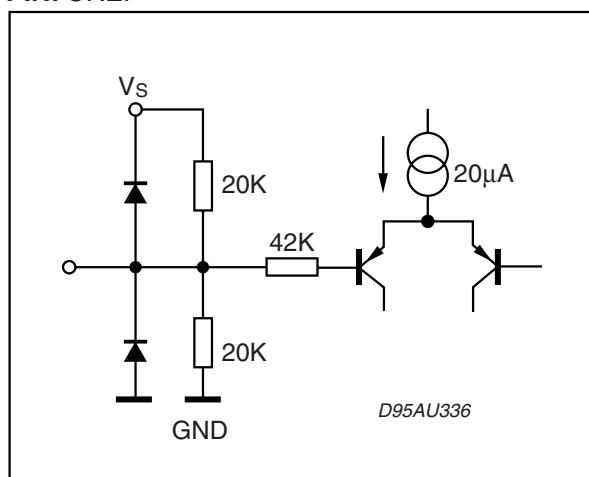
PIN: TREBLE-L, TREBLE-R



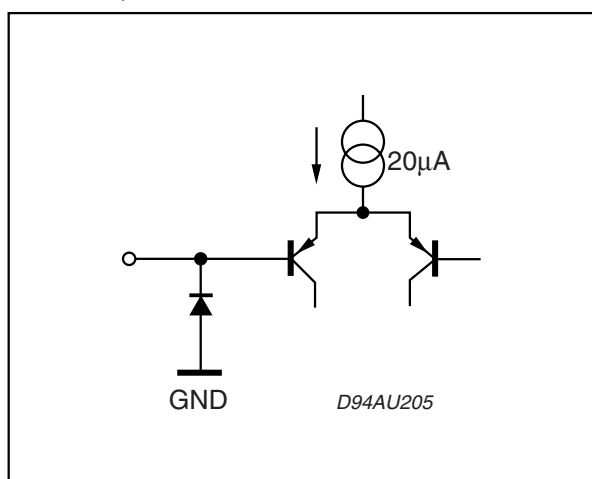
PIN: VOUT REF

PIN: L-IN, R-IN, L-IN2, R-IN2, L-IN3, R-IN3,  
L-IN4, R-IN4,

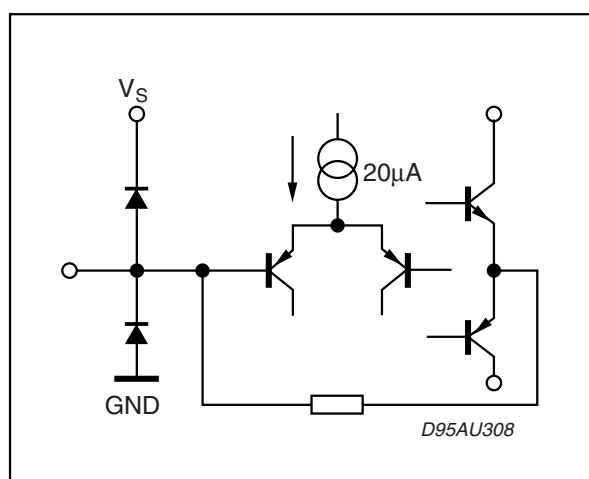
PIN: CREF



PIN: SCL, SDA

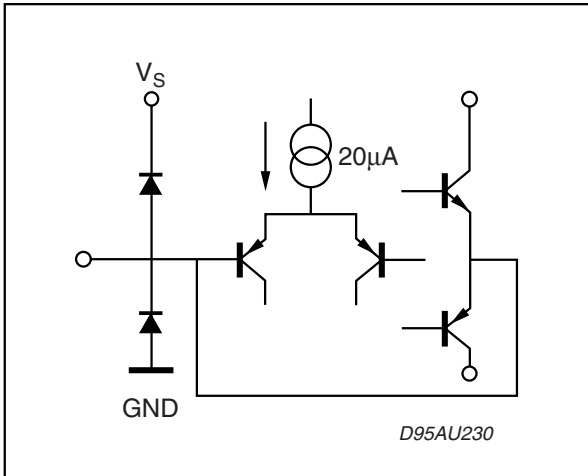


PIN: LP

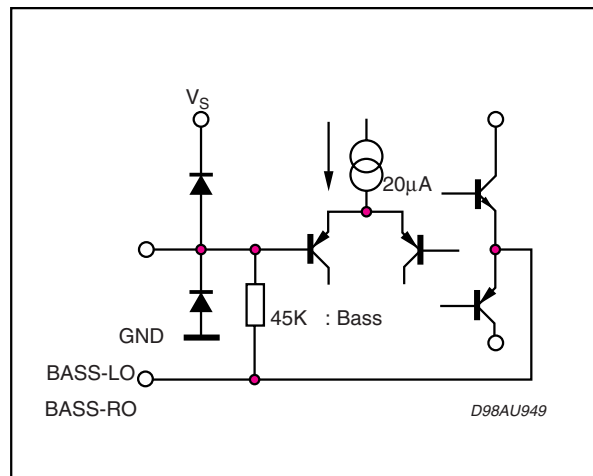




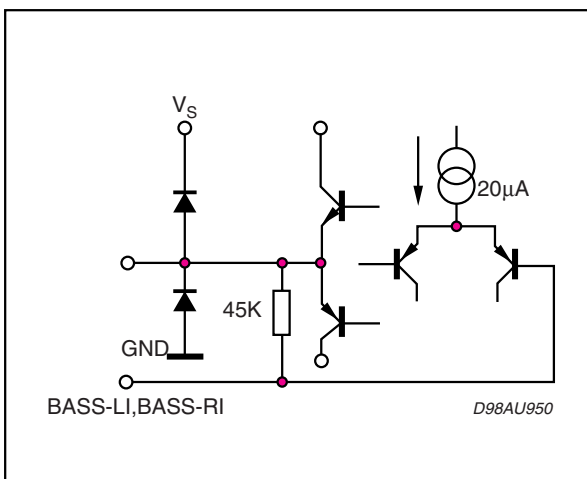
**PIN:** L-OUT, R-OUT



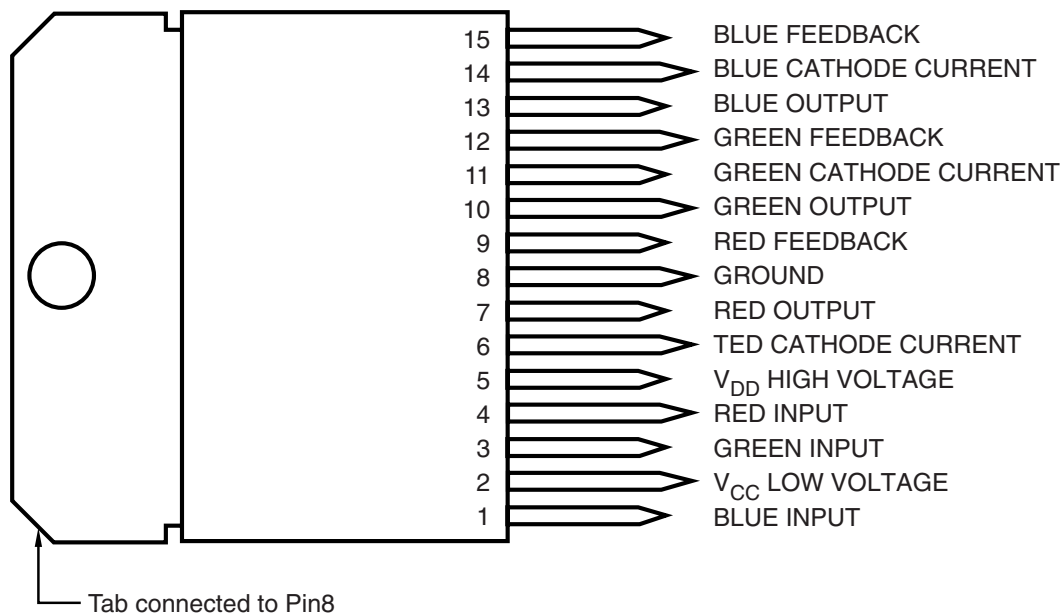
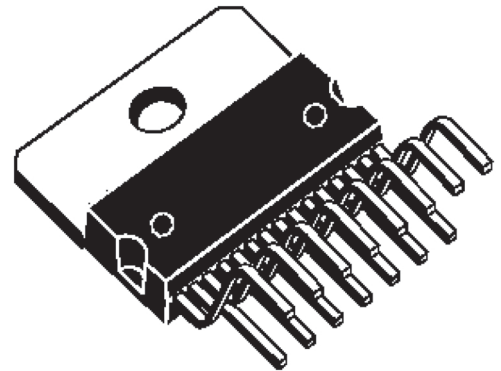
**PIN:** BASS-LI, BASS-RI



**PIN:** BASS-LO, BASS-RO



BANDWIDTH : 10MHz TYPICAL  
 RISE AND FALL TIME : 50ns TYPICAL  
 CRT CATHODES CURRENT OUTPUTS FOR  
 PARALLEL OR SEQUENTIAL CUT-OFF OR DRIVE  
 ADJUSTMENT  
 FLASHOVER PROTECTION  
 POWER DISSIPATION : 3.5W  
 ESD PROTECTED

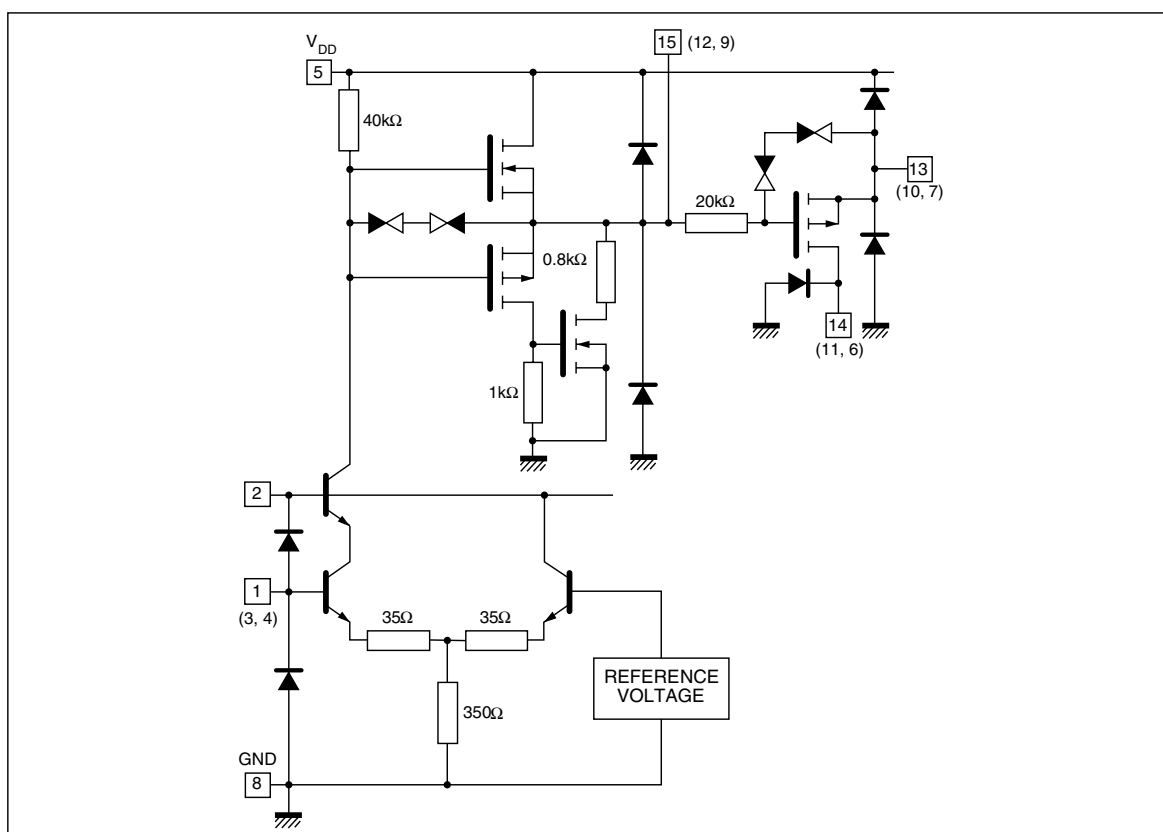


## PIN FUNCTION

N	Function	Description
1	Blue Input	Input of the “blue” amplifier. It is a virtual ground with 3.8V bias voltage, 15 microamperss input bias current with 14K $\Omega$ input resistance.
2	Vcc	Low voltage power supply, typically 12V.
3	Green Input	See Pin 1.
4	Red Input	See Pin 1.
5	VDD	High voltage power supply, typcally 200V.
6	Red Cathode Current	Provides the video processor with a copy of the DC current flowing into the red cathode, for automatic cut-off or gain adjustment. If this control is not used, Pin 6 must be grounded.
7	Red Output	Output driving the red cathode. Pin 7 is internally protected against CRT arc discharges by a diode limiting the output voltage to VDD.
8	Ground	Also connected to the heatsink.
9	Red Feedback	Output driving the feedback resistor network for the red amplifier.
10	Green Output	See Pin 7.
11	Green Cathode Current	See Pin 6.
12	Green Feedback	See Pin 9.
13	Blue Output	See Pin 7.
14	Blue Cathode Current	See Pin 6.
15	Blue Feedback	See Pin 9.

## BLOCK DIAGRAM OF EACH CHANNEL

### BLOCK DIAGRAM OF EACH CHANNEL



5101B-02.EPS

## 6. STR-W6753

### 1 Introduction

The STR-W6700 series is a Hybrid IC (HIC) designed for Quasi-Resonant type Switching Mold Power Supply built-in a Power MOSFET and Control IC. At the normal operation, the HIC provides high efficiency and low noises by the Bottom-Skip Quasi-Resonant Operation, and low power consumption is also achieved by the blocking (intermittent) oscillation at stand-by mode.

The HIC adopts 6 pins full-mold package (TO220F-6L, Sanken Package Type No.: FM207) and is suitable for downsizing and standardizing of a SMPS having a limited mounting space. Furthermore, the HIC is made possible to ease circuit design with a small number of external parts, and it also makes possible to miniaturize and standardize the SMPS.

### 2 Features

- 1). The operation mode turns blocking oscillation by reducing output voltage at stand-by mode.
- 2). In addition to the existing Quasi-Resonant Operation, the Bottom-Skip Function is added in order to be efficient from light to medium load.
- 3). Soft-Start Operation is provided at the SMPS start-up.
- 4). Switching noise is reduced by Step-Drive Function.
- 5). Avalanche energy of the MOSFET is guaranteed.
- 6). Overcurrent Protection (OCP), Overvoltage Protection (OVP), Overload Protection (OLP), and Maximum ON-Time control circuits are incorporated.
- 7). It is possible to save the SMPS design time by utilizing the present designs and evaluation processes.

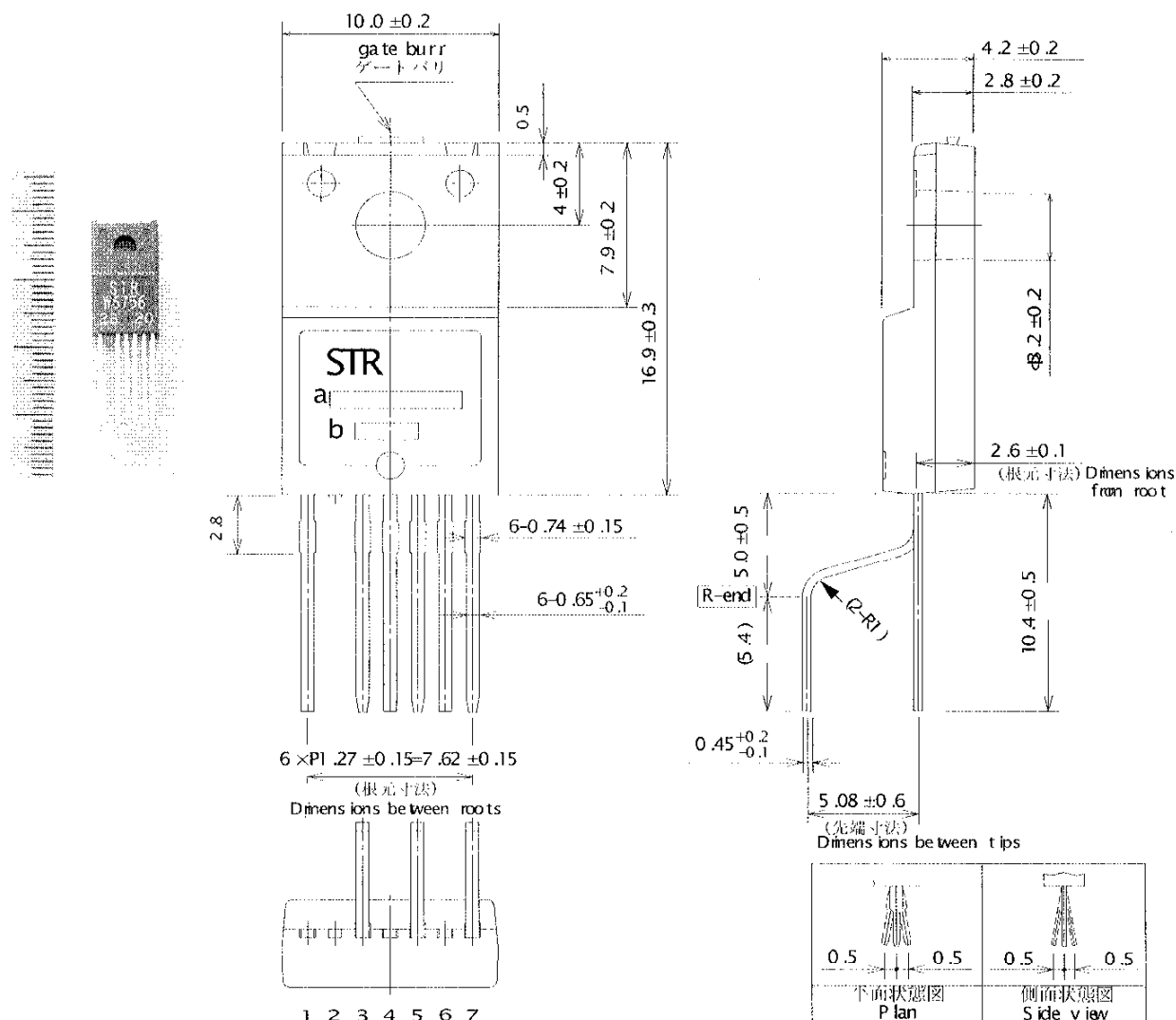
### 3 STR-W6700 Series Line-up

Type	MOSFET V <sub>DSS</sub> [V]	R <sub>DS(ON)</sub> MAX[Ω]	V <sub>AC</sub> INPUT[V]	P <sub>out</sub> [W] ※1	Mass- Production	Engineering Sample
STR-W6754	650	1.00 ※2	WIDE	100 ※2	2Q/2003	4Q/2002
			220	200 ※2		
STR-W6756	650	0.73 ※2	WIDE	140 ※2	2Q/2003	4Q/2002
			220	280 ※2		

※1. The listed output power represents a thermal rating value, and the peak output power can be obtained up to 120% - 140% to the thermal rating value. In case of low output power and narrow ON duty, the output power shall be lower than that of the above listed.

※2. The value is still tentative because of the underdevelopment parts.

### 4 Outline Drawings (LF2003)



端子の材質: Cu  
Material of terminal: Cu  
端子の処理: Niメッキ+半田ディップ  
Treatment of terminal: Ni plating+solder dip  
製品質量: 約2.3g  
Weight: Approx. 2.3g

#### 注記 Note

--- 部は高さ0.3mmのゲートバリ発生箇所を示します。  
shows a point where 0.3mm gate burr is produced.

図番:

DWG No.:

単位: mm

Dimensions: in mm

a. 品名標示 W6700

Type Number

b. ロット番号  
Lot Number

第1文字 西暦年号下1桁  
1st letter The last digit of year

第2文字 製造月  
2nd letter Month

1 ~ 9月 アラビア数字

10月 O

11月 N

12月 D

(1 to 9 for Jan. to Sept.,  
O for Oct., N for Nov., D for Dec.)

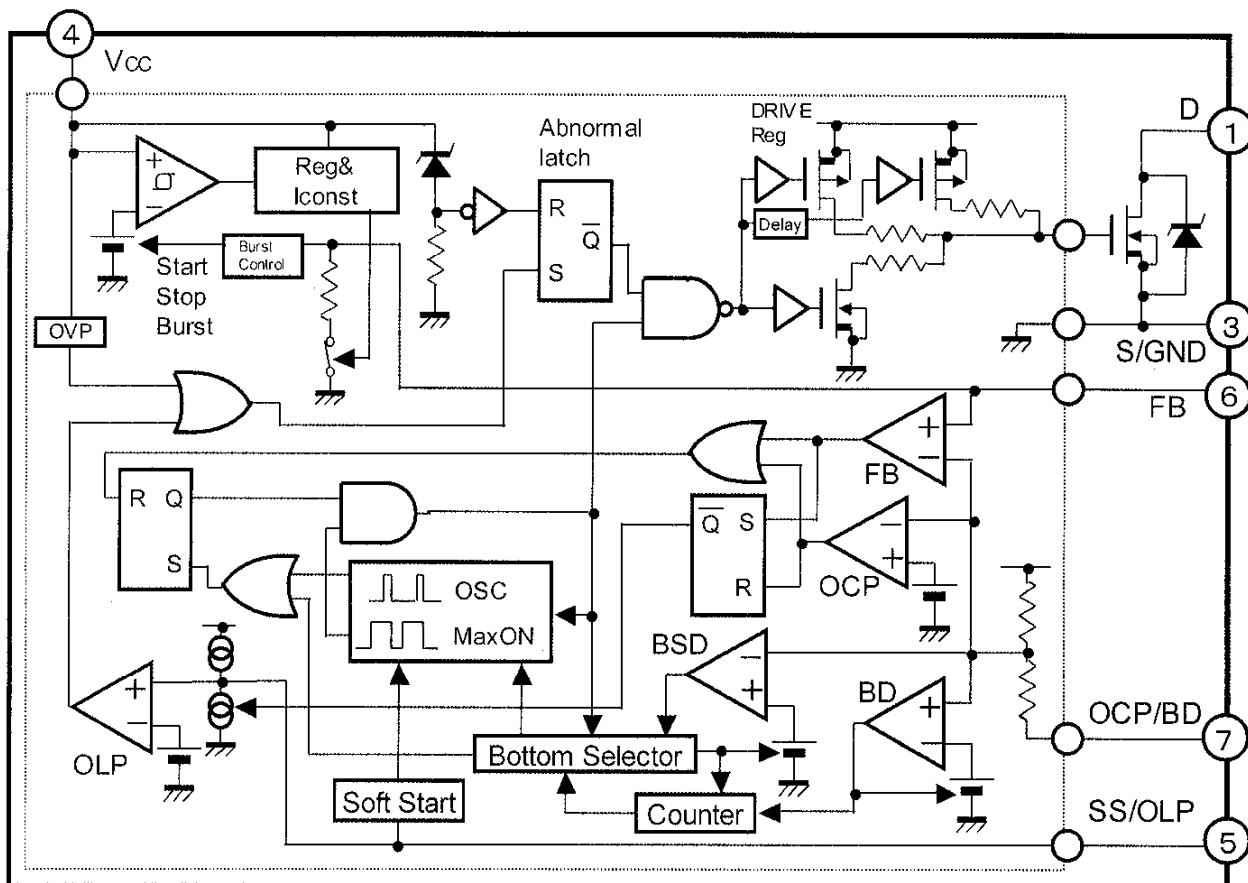
第3、4文字 製造日

3rd & 4th letter Day

01 ~ 31 アラビア数字

Arabic numerals

### 5 Block Diagram



#### Functions of Each Terminal

Terminal No.	Symbols		Terminal Descriptions	Functions
	STR-W6700 [TO220F-6L]	STR-X6700※ [TO3PF-7L]		
1	D		Drain Terminal	MOSFET Drain
2	※2	S	Source/Grand Terminal	MOSFET Source and Ground
3	S/GND	GND		
4	Vcc		Power Supply Terminal	Control Circuit Power Supply Input
5	SS/OLP		Delay at Overload/Soft-Start set up Terminal	Overload Protection and Soft-Start Operation Time set up
6	FB		Feedback Terminal	Constant Voltage Control Signal Input, Blocking Oscillation Control
7	OCP/BD		Overcurrent Protection Input/Bottom Detection Terminal	Overcurrent Detection Signal Input / Bottom Detection Signal Input

※1. STR-X6700 is a HIC, which has a different package from STR-W6700.

※2. Terminated Pin (Refer to the Outline Drawings)

### 6 Electrical Characteristics (Example: STR-W6756)

#### 6.1 Absolute Maximum Ratings (Ta=25°C)

Parameters	Terminal	Symbols	Ratings	Units	Conditions
Drain Current	1 - 3	IDpeak※1		A	Single Pulse
Maximum Switching Current	1 - 3	IDMAX※2		A	Ta=-20~+125°C
Avalanche Energy Capacity	1 - 3	EAS※3		mJ	Single Pulse VDD=99V, L=20mH IL= A
Control Part Power Supply Voltage	4 - 3	VCC	35	V	
SS/OLP Terminal Voltage	5 - 3	VOLPSS	-0.5~6	V	
FB Terminal Inflow Current	6 - 3	IFB	10	mA	※Under examination
FB Terminal Voltage	6 - 3	VFB	-0.5~7.5	V	
OCP/BD Terminal Voltage	7 - 3	VOCBPD	-1.5~5	V	
MOS FET part Permissive Loss	1 - 3	PD1※4		W	With Indefinite Heat-sink
					Without Heat-sink
Control part Permissive Loss (MIC)	4 - 3	PD2※5		W	Regulated at Vcc x Icc
Operational Internal Frame Temperature	—	TF	-20~+125	°C	Refer to Recommended Operational Temperature
Operational Ambient Temperature	—	Top	-20~+125	°C	
Storage Temperature	—	Tstg	-40~+125	°C	
Channel Temperature	—	Tch	+150	°C	

※1. Refer to the MOSFET A.S.O. curve listed on the specification sheet.

※2. Maximum Switching Current listed on the specification sheet.

Maximum Switching Current represents Drain Current which is determined by IC internal drive voltage and MOSFET Vth.

※3. Refer to the MOSFET Tch-EAS curve listed in the specification sheet.

※4. Refer to the MOSFET Ta \*PD1 curve listed in the specification.

※5. Refer to the MIC TF-PD2 curve listed in the specification sheet.

#### 6.2 Electrical Characteristics in Power MOS FET (Ta = 25°C)

Parameters	Terminal	Symbols	Ratings			Units	Conditions
			MIN	TYP	MAX		
Drain-Source Voltage ※7	1 - 3	VDSS	650	—	—	V	※6
Drain Leakage Current	1 - 3	IDSS	—	—	300	*p3451XA	
ON Resistance ※7	1 - 3	RDS(ON)	—	—	0.73	Ω	
Switching Time	1 - 3	t f	—	—	—	Nsec	
Thermal Resistance ※7	—	θ ch-F	—	—	—	°C/W	Channel *p3451XA Frame

※6. Refer to the specifications of each product for the details.

※7. The ratings shall be different to each product. Refer to the specifications for the detail.

## 6.3 Electrical Characteristics (Ta = 25°C)

Parameters	Terminal	Symbols	Ratings			Units	Conditions	
			MIN	TYP	MAX			
Power Supply Start-up Operation								
Operation Start-up Voltage	4 - 3	VCC(ON)		18.2		V		
Operation Stop Voltage	4 - 3	VCC(OFF)		9.6		V		
Operation Circuit Current	4 - 3	ICC(ON)	----	—	6	mA		
Non Operation Circuit Current	4 - 3	ICC(OFF)	—	----	100	*p3780XA		
Oscillation Frequency	1 - 3	fOSC		22		kHz		
Soft-Start Operation Stop Voltage	5 - 3	VSSOLP(SS)		1		V		
Soft-Start Operation Charging Current	5 - 3	ISSOLP(SS)		-450		*p3780XA		
Normal Operation								
Overcurrent Detection Threshold Voltage	7 - 3	VOCPCD(LIM)		-0.95		V		
Bottom-Skip Operation Threshold Voltage 1	7 - 3	VOCPCD(BS1)		-0.66		V		
Bottom-Skip Operation Threshold Voltage 2	7 - 3	VOCPCD(BS2)		-0.44		V		
OCP/BD Terminal Outflow Current	7 - 3	IOCPBD				*p3780XA		
Quasi-Resonant Operation Threshold Voltage 1	7 - 3	VOCPCD(TH1)		0.4		V		
Quasi-Resonant Operation Threshold Voltage 2	7 - 3	VOCPCD(TH2)		0.8		V		
Minimum Quasi-Resonant Signal Input Time	7 - 3	TOFF(MIN)	—	—	1	*p3746Xs		
FB Terminal Threshold Voltage	6 - 3	VFB(OFF)		1.5		V		
FB Terminal Inflow Current (Normal Operation)	6 - 3	IFB(ON)				mA		
Stand-by Operation								
Stand-by Operation Start-up Power Supply Voltage	4 - 3	VCC(S)		11.2		V	※ 8	
Stand-by Power Supply Voltage Interval	4 - 3	VCC(SK)		1.5		V		
Stand-by Non-Operational Circuit Current	4 - 3	ICC(S)		30		μA		
FB Stand-by Operation Threshold Voltage	6 - 3	VFB(S)				V		
FB Terminal Inflow Current (Stand-by)	6 - 3	IFB(S)				*p3780XA		
Minimum ON Time	1 - 3	TON(MIN)		1		*p3746Xs		
Protection Operation								
Maximum ON Time	1 - 3	TON(MAX)		34		*p3780XS		
OLP Operation Threshold Voltage	5 - 3	VSSOLP(OLP)		5		V		
OLP Operation Charging Current	5 - 3	ISSOLP(OLP)		-10		*p3780XA		
Normal Operation Discharging Current	5 - 3	ISSOLP(NOR)		40		*p3780XA		
OLP Delay Time	1 - 3	TOLP				ms		
OVP Operational Voltage	4 - 3	VCC(OVP)		27.5		V		
Latch Circuit Holding Current ※10	4 - 3	ICC(H)	----	—	150	*p3780XA		
Latch Circuit Releasing Power Supply Voltage ※10	4 - 3	VCC(La.OFF)		7.3		V		

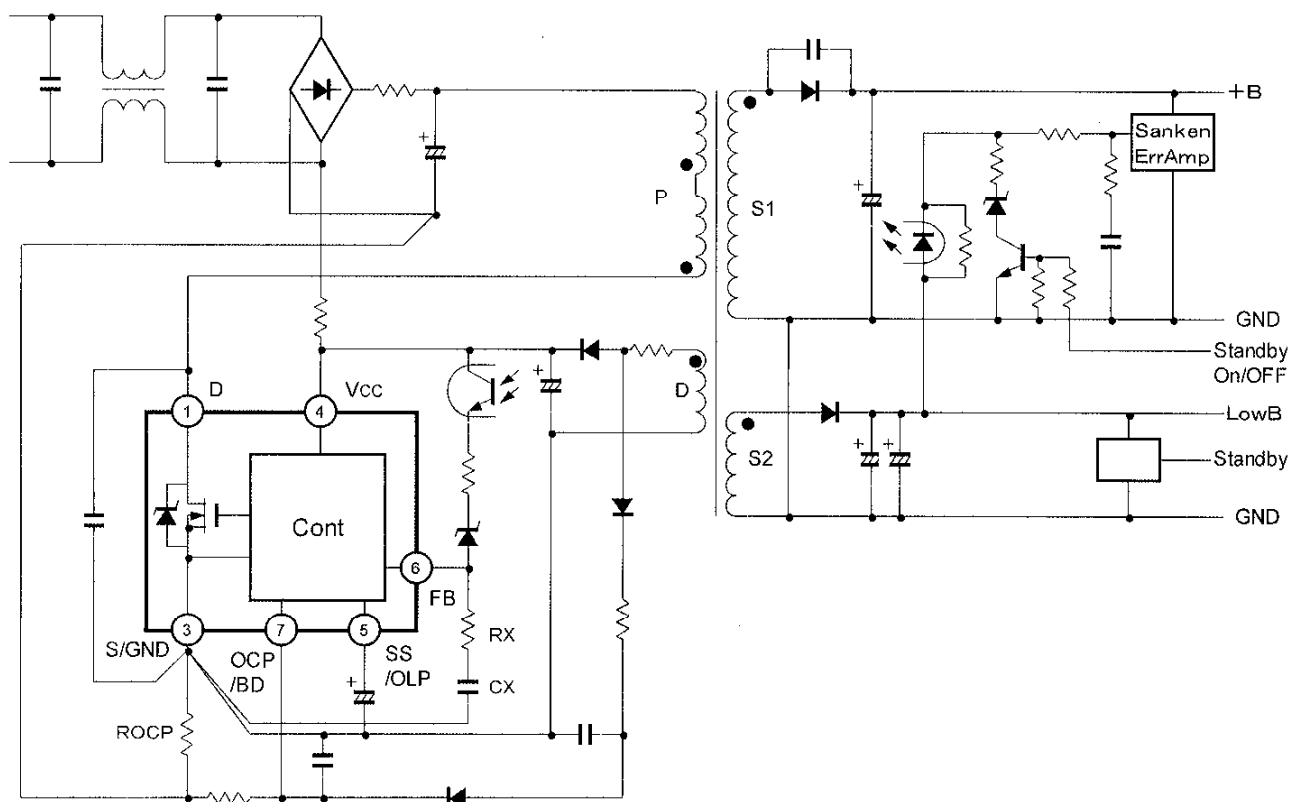
※8. Refer to the specifications for the details.

※9. The current rating is based on the HIC \*p3780Xs, and plus(+) represents sink and minus(-) represents source.

※10. Latch circuit is the circuit operated by OVP and OLP.

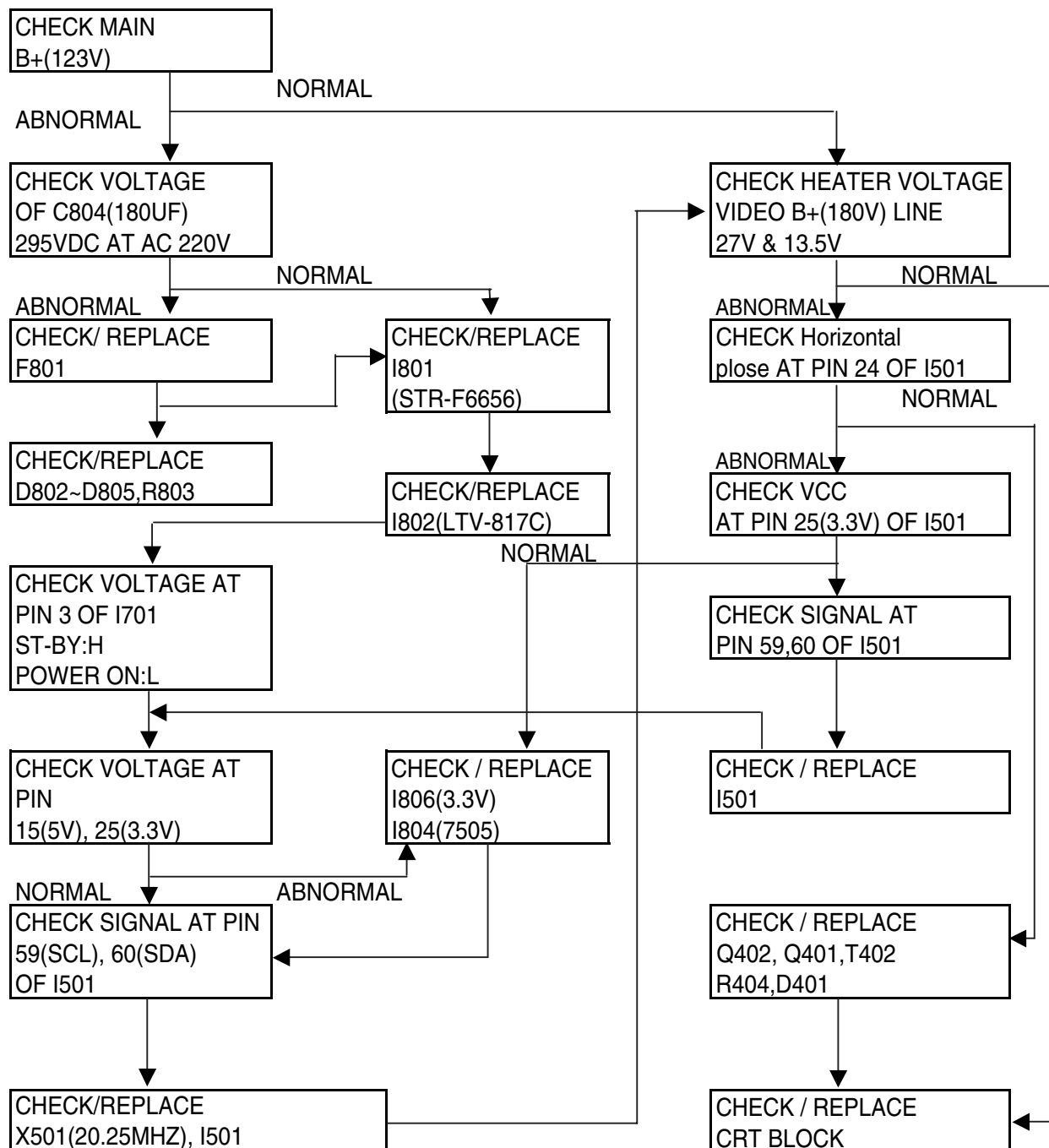


## 7 Applicable Circuit (Example)

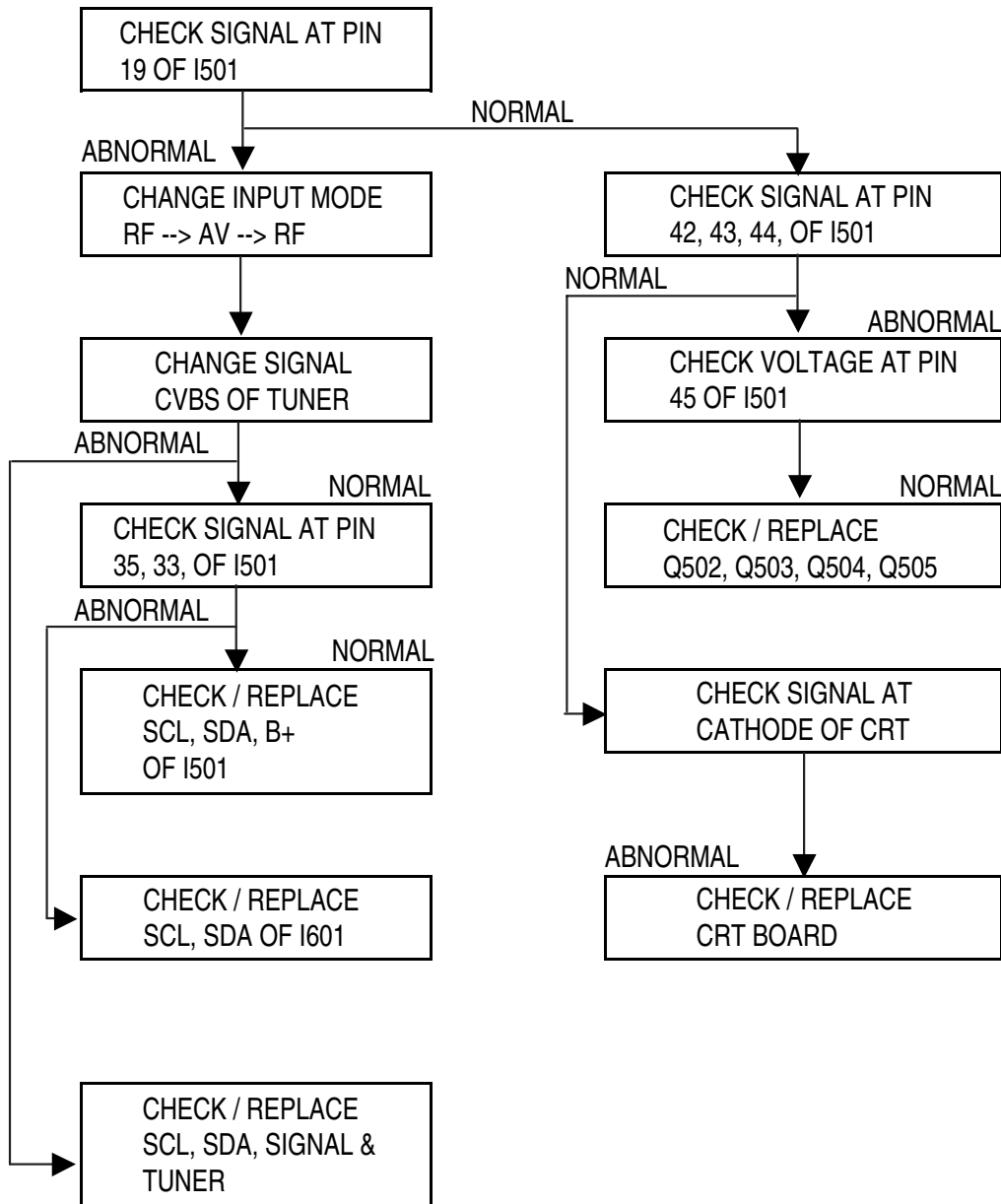


## 10. TROUBLE SHOOTING CHARTS

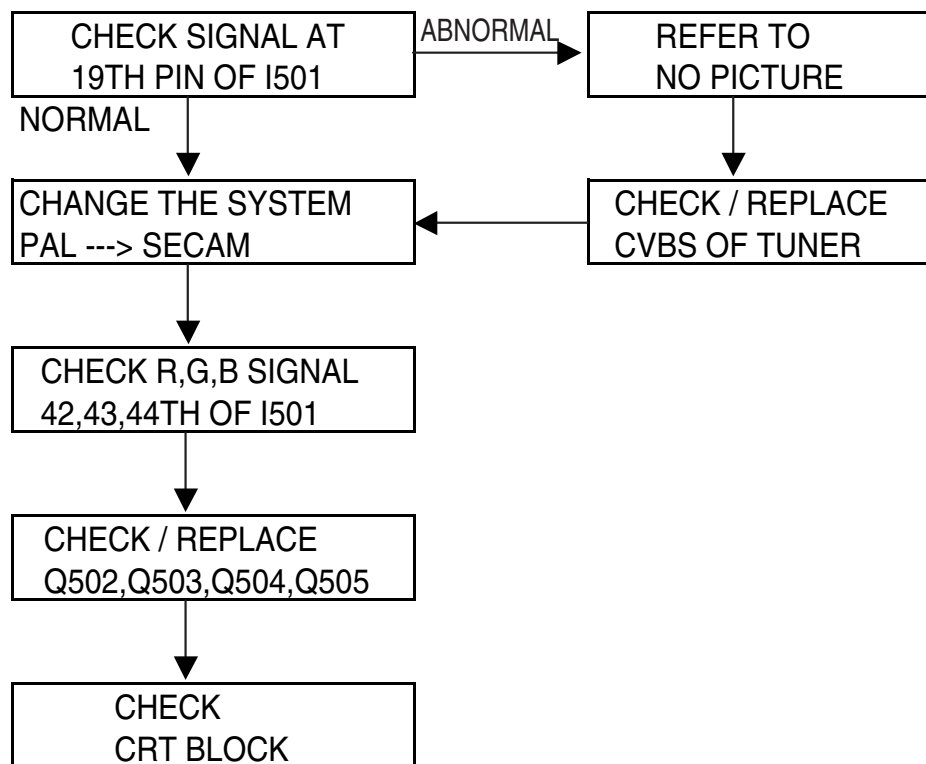
### 1. NO RASTER



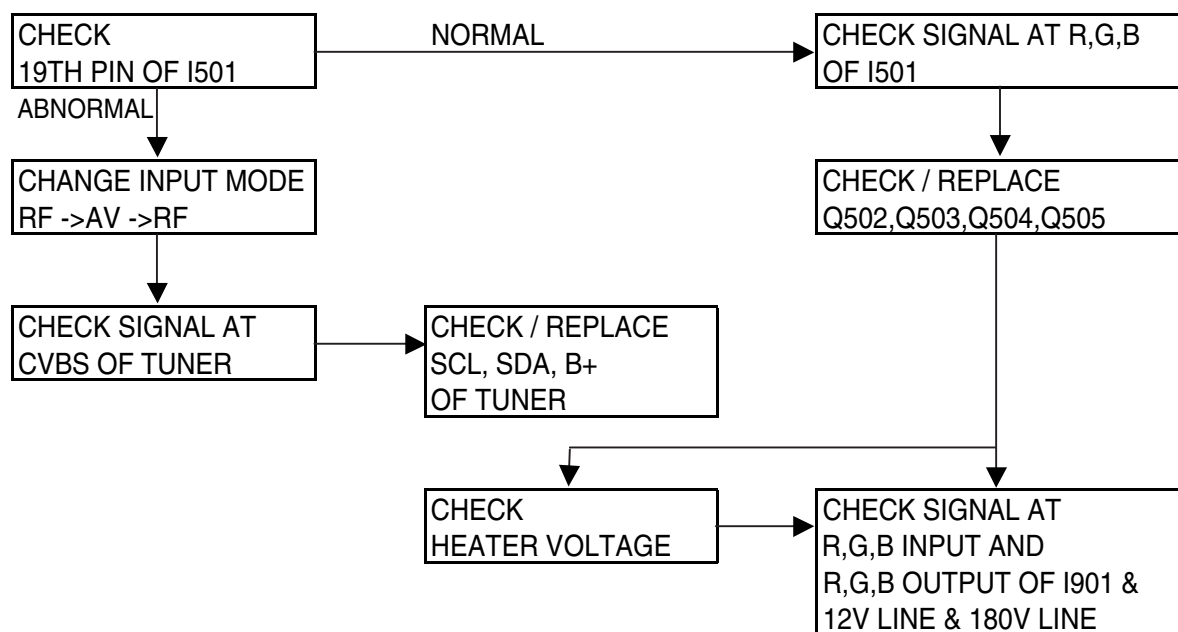
## 2. NO PICTURE(RASTER OK)



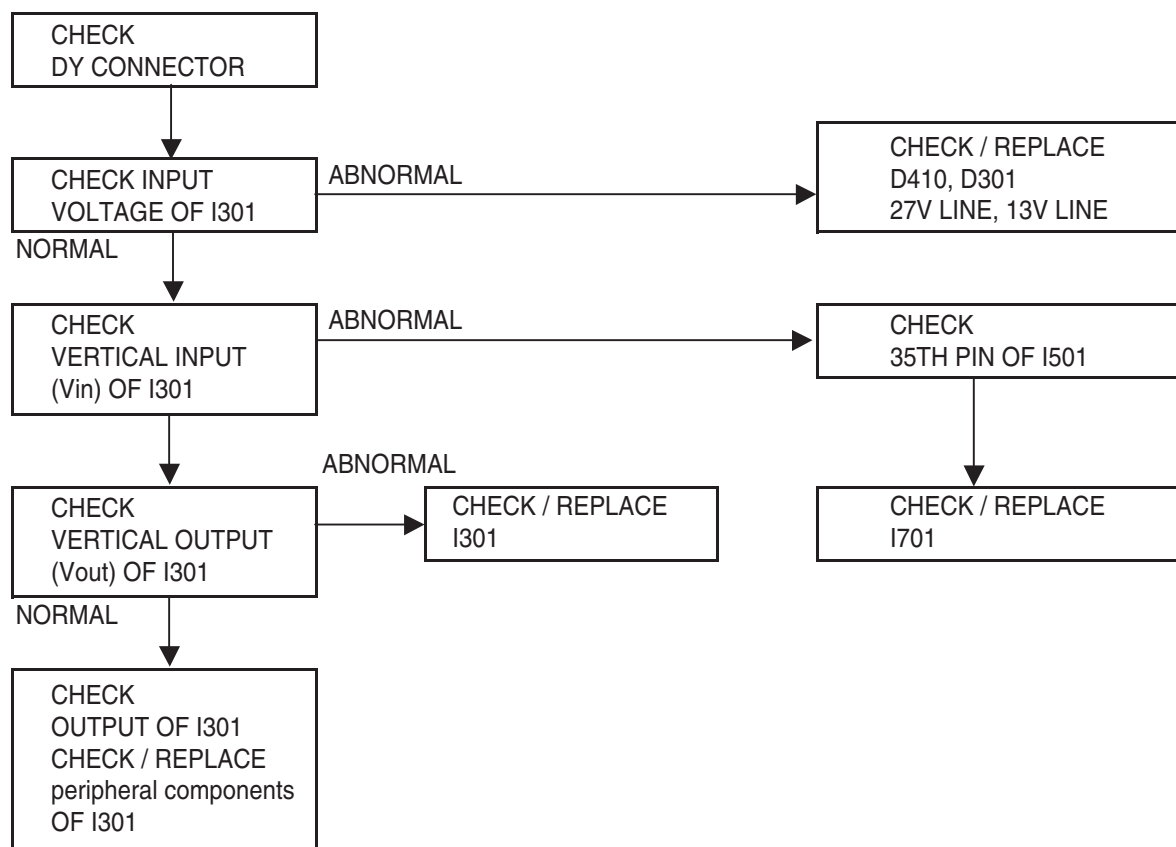
### 3. NO COLOR



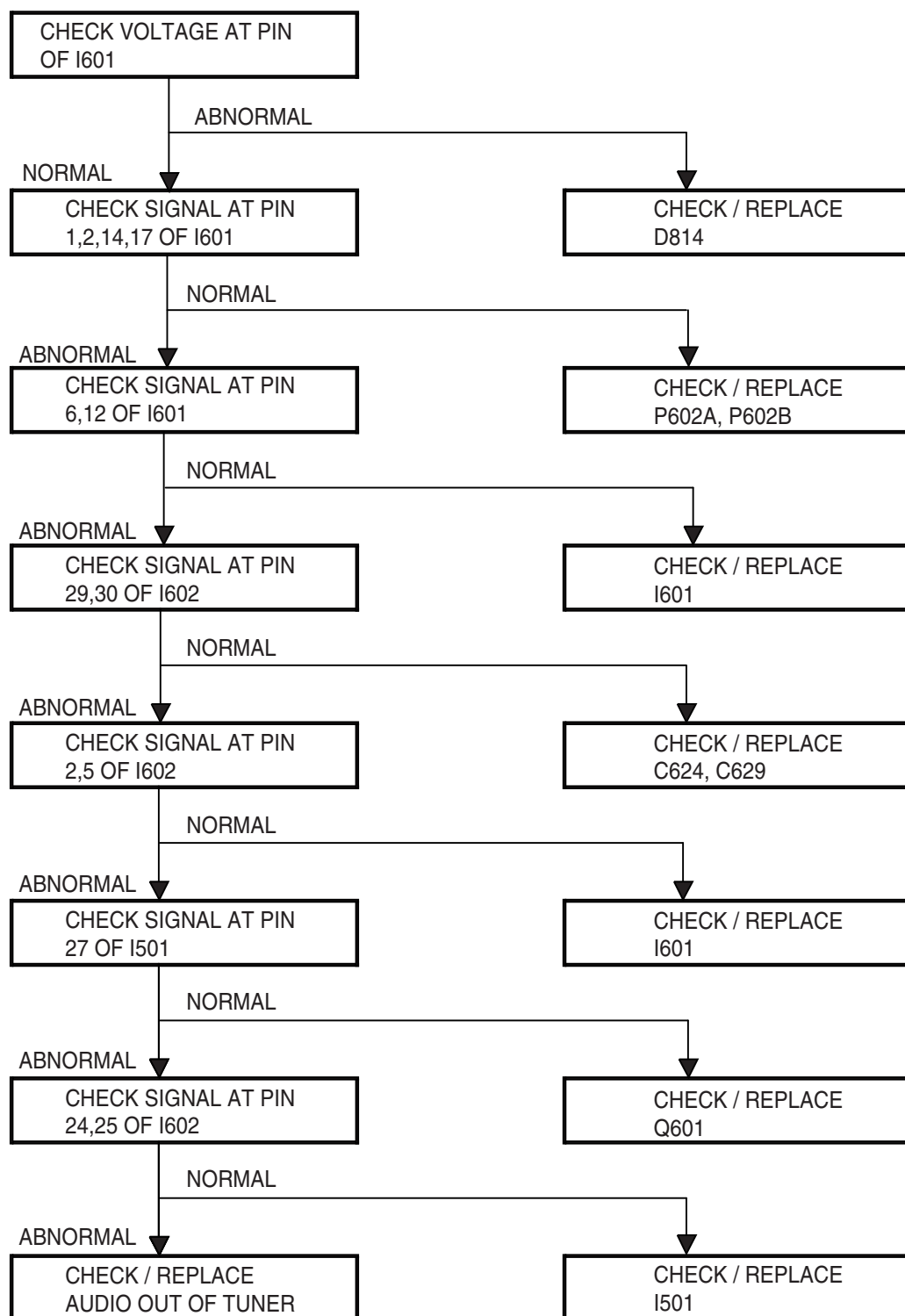
## 4. NO PICTURE



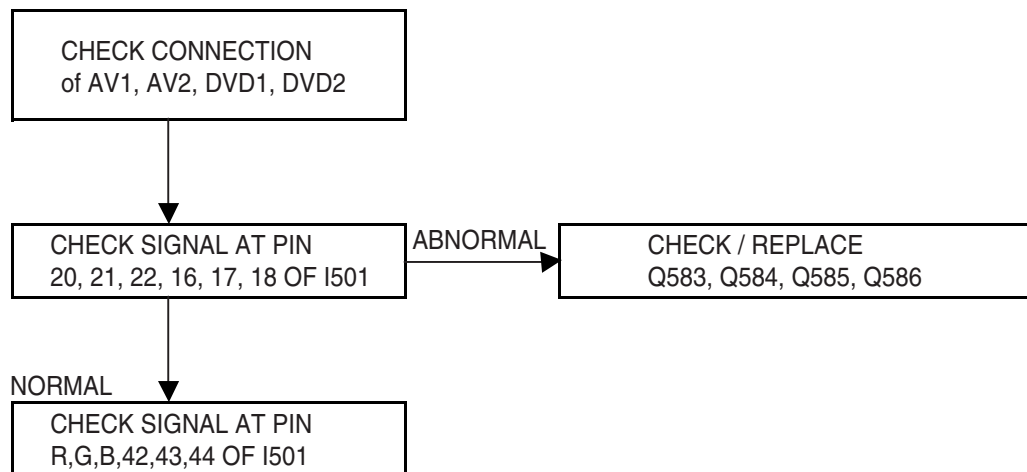
## 5. NO VERTICAL SCANNING(ONE HORIZONTAL LINE RASTER)



## 6. NO MIAN SOUND (PICTURE)

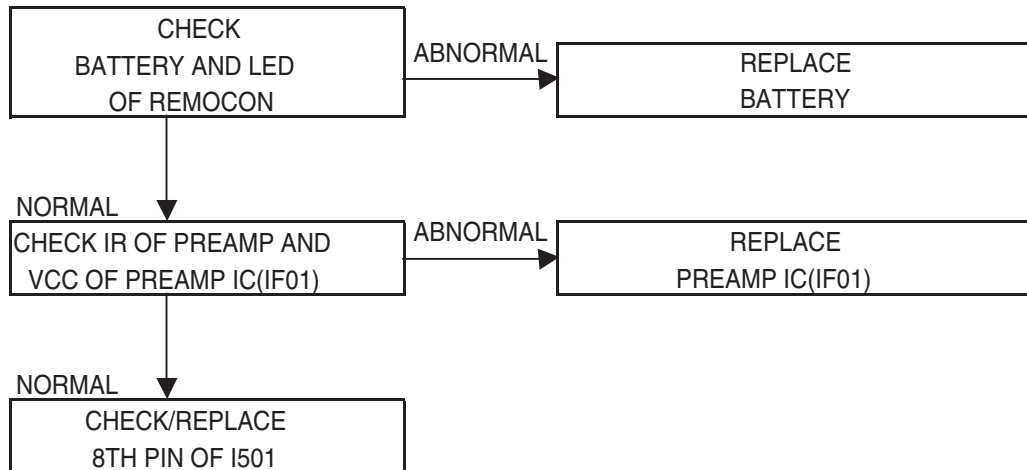


## 7. NO EXTERNAL AV(RF OK)





## 8.REMOTE CONTROL UNIT TROUBLE



**DAEWOO**

DAEWOO ELECTRONICS Corp.

686, AHYEON0DONG MAPO-GU

SEOUL, KOREA

C.P.O. BOX 8003 SEOUL, KOREA